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ERRATA.

Page 64, 17th line from the bottom, for "have been regarded," read "have regarded."
" 77, 6th line from the bottom, omit "ending," &c. to the period. It is the *Trans. Diam.* not the left oblique, which ends at the point where the distended right auricle swells out from the ventricle.
" 91, 1st line after the Table, for "16+," read 16.2. —
" 92, 2d line from the bottom, for "$18\frac{4}{12}$," " "$18\frac{10}{12}$."

THE

NEW-YORK QUARTERLY JOURNAL

OF

MEDICINE AND SURGERY.

FOR JULY, 1840.

Art. I. *Observations on the Diagnosis of Diseases of the Heart, (organic and functional,) with Illustrative Cases.* By John A. Swett, M. D., Lecturer on the Diseases of the Chest.

In studying the pathology of the Heart, it is certainly of the utmost importance to distinguish organic disease from such changes as are purely functional. The question, Does organic disease exist? is asked every day, so numerous are the cases in which this condition may present itself. Perhaps, however, an equal number of cases will be found which have excited strong suspicions on the part of both patient and practitioner that organic change has taken place, which a more careful examination may happily serve to correct and remove. I propose, therefore, to inquire, in the first place, what are the means we possess of answering the above question correctly, and afterwards to offer illustrations of individual forms of organic disease of the heart, the diagnosis of which is by many supposed to be very uncertain.

The first proposition is a general one, relating simply to the distinguishing organic disease of the heart from mere functional disturbance, which is commonly a sympathetic affection. And here I would remark, that I exclude from this examination all acute diseases of the heart, as endocarditis, and both acute and chronic affections of the pericardium.

We have gained a great point in the diagnosis of organic disease when we have established the relative frequency of the changes an organ may undergo. The importance of this fact is admirably illustrated in the study of the morbid anatomy of the heart. In a Quarterly Essay which I read before the New-York Medical and Surgical Society, May, 1837, I offered an analysis of 48 cases of disease of the heart, from which, among others, the following conclusions were deduced.

I. That *Enlargement* is an almost universal condition of organic disease of the Heart.

II. That in cases where the enlargement of the heart is partial, the left side is most commonly affected, in the proportion of 17 to 8. But that in one-third of the cases the enlargement is general,—(12 times in 37 cases.)

The first of the above conclusions I conceive to be of infinite importance in the diagnosis of organic disease from mere functional disturbance. Enlargement being an almost constant element of organic change in the heart, becomes for this very reason a point of great interest; and if by care and attention its early progress can be traced and established, most of the uncertainty that belongs to the question before us at once disappears. I have here used the term enlargement in its generic sense, without reference to its *kind*, whether existing as hypertrophy, or as dilatation, or as both combined. The importance of distinguishing these different forms of disease is not questioned, but in our present view of the subject these distinctions are of little utility.

To determine the fact of enlargement of the heart, we must rely almost entirely upon the *physical signs ;* the rational signs, as palpitation, pain and stricture about the heart, the state of the pulse, &c. will not enable us to establish it; we must expose the precordial region and search there for the conclusive evidences of enlargement.

I. The most constant, and so far as I have observed, the *earliest* sign indicative of enlargement of the heart is this: *the point where the apex strikes the parietes of the chest is no longer in its natural situation* between the 5th and 6th ribs, an inch below and to the inside of the nipple,* but farther to the left: and as the enlargement increases, this point commonly becomes more elevated, the apex sometimes striking an inch and a half outside the nipple, and as high as the 4th rib. It is an error to suppose that the apex of the heart commonly descends in the chest as the organ enlarges, although, as we shall notice in some of the cases that follow, this may happen;—the oblique direction of the heart in the chest, and its contact with the diaphragm below, explain perfectly the phenomenon in question. But there are several sources of error which must be alluded to. Before we can rely on so delicate a test of enlargement of the heart as a slight displacement of its apex, we must assure ourselves, by careful examination, that the organs in its neighbourhood are in their normal condition. Thus a deformity in the parietes of the chest may sensibly affect this point; an effusion into the cavity of the pleura may push the heart out of place: a considerable distension of the stomach with gas, or of the abdomen with dropsical effusion, or an enlargement of the left lobe of the liver, may produce the same result. I shall detail in the sequel a remarkable case, where the apex of the heart was pushed an inch out of its place by this last mentioned cause, giving rise also to other strongly-marked symptoms of cardiac disease. With these precautions, I think we may safely establish the proposition that any deviation of the apex of the heart to the left, and commonly upward, is the earliest physical sign of enlargement.

II. Another evidence of enlargement of the heart is derived from the *percussion of the precordial region;* but this appears to be of less value than that already mentioned, and for two reasons: 1st. Because there are other diseases of the heart itself, in which the sound of percussion is equally affected, as in pericarditis with effusion of serum; but still more, because the natural degree of resonance in this region is not fixed but relative—relative to the developement of the lungs and to the elasticity of the parietes of the chest. It is true that the limits of marked dulness over the precordial region in the natural state seldom exceeds one and a half inches square; any excess of this limit should therefore excite attention, but as the passage from the dull to the clear sound is always gradual, it is extremely difficult, if not impossible, to seize upon minute shades of difference in extent. I think that a better indication of enlargement of the heart drawn from percussion, is the *degree* of dulness rather than its extent. After sufficient practice it is commonly easy to determine on percussing the precordial region, whether the dulness exceeds the degree of the normal condition. It should, however, be remembered that in the normal condition this dulness is never complete, even in the centre of this region, a thin layer of lung overlapping the heart, especially during the period of full inspiration. The first effect of enlargement is to push back the lungs, to uncover the heart, and thus to increase the degree as well as the extent of the dulness over the precordial region.

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* Numerous observations have proved to my satisfaction, that the above mentioned point is that against which the apex of the heart strikes in adults of the ordinary size and developement when in the sitting posture or standing erect. In the recumbent posture the apex rises from $\frac{1}{3}$ to $\frac{1}{2}$ an inch higher in the chest. The effect of a change of posture on other physical signs of cardiac disease is equally distinct and important. Thus it frequently happens that a morbid sound over the region of the valves, which is simply a soft bellows sound in the recumbent posture, becomes rough and grating if the patient sits up. I have even seen cases in which no morbid sound was distinguished while the former posture was retained, in which it became quite distinct on the rising of the patient. This change I believe to be produced chiefly by the heart being brought more closely and directly in contact with the sternum and ribs, and thus the transmission of sound becomes more direct and easy. In some cases, especially in those far advanced, the action of the heart is decidedly increased by even the moderate effort required to change the position, which might add to the effect produced, but careful attention will show that the first mentioned cause is the principal one.

III. A third indication of enlargement is the *absence of the respiratory murmur* over the precordial region. I believe it may be stated as an universal fact, that when the heart and lungs are both acting naturally this murmur may be heard over every part of the precordial region. Indeed, this might have been inferred from what has just been stated when treating of percussion, that the lung quite covers the heart, or nearly so. The remarks made in relation to the circumstances which diminish the sound on percussion apply equally to the respiration: whatever tends to crowd back the lung, whether it be enlargement of the heart or effusion into the pericardium, will diminish or destroy the respiratory murmur over the precordial region. It should be remembered, however, that where this absence of the respiration is dependent upon enlargement of the heart, a very considerable degree of enlargement is necessary to this result.

IV. The fourth physical sign of enlargement of the heart is *dilatation* over the precordial region. That this change may occur with great rapidity in many cases, is proved by what we notice in acute pericarditis; that the same change occurs, but more gradually, in cases of enlargement of the heart, is proved by every day's experience. The heart, I think, seldom becomes even moderately enlarged without inducing a corresponding dilatation of the precordial region. But it is important to remember here, also, the fact already insisted upon, that the abnormal condition of other parts or organs may produce the physical sign of dilatation; thus effusion into the pericardium, emphysema of the left lung, enlargement of the left lobe of the liver, may lead to this result. M. Woillez,* a recent writer on "the inspection and mensuration of the chest, as aids to auscultation and percussion in the diagnosis of thoracic disease," states, among other valuable remarks, that among 100 individuals in whom the heart was in its normal condition, 26 presented a dilatation over the precordial region. In some cases, especially in those who were left-handed, this was evidently owing to an unusual developement of the pectoral muscles; in other cases, this deformity was in the ribs and cartilages themselves, or dependent upon a curvature of the spine. These cases can, however, generally be distinguished by an attention to one or two particulars. 1st. When the dilatation is owing to the enlargement of an internal organ, as the heart, the intercostal spaces are *also pushed out*, which is not the case where the deformity depends upon some original malformation of the skeleton; and in the 2d place, the dilatation of the parietes, if caused by enlargement of the heart, would be accompanied by increased dulness on percussion, which would not be found where the deformity had its origin in the parietes, except in the one instance, as stated above, where it is dependent upon increased developement of the pectoral muscles.

The four physical signs enumerated above, appear to me to be our chief, our only certain reliance in the diagnosis of enlargement of the heart, and their relative value is indicated by the order in which they have been stated. It will also appear sufficiently clear from the statements made in connection with them, that something more than their simple recognition is necessary to their proper application to practice, all of which may be expressed by the following question: Cannot these signs, either singly or combined, be explained by some cause independent of the heart? It is only when we have established the integrity of the neighbouring organs that we can answer this question correctly. The following case will illustrate in a striking manner, the way in which changes independent of the heart may produce to a remarkable extent, not only the signs of enlargement of that organ, but also of other forms of cardiac disease.

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* Archives Gen. de Méd. 1839.

Case I.—Dilatation and dulness over the precordial region; double rasping sound over the heart. Heart normal; tubercular enlargement of the left lobe of the liver.

A female aged 20 years, entered the Bellevue Hospital in the last stage of emaciation. She was too feeble to give a detailed account of her previous symptoms, but she persisted in saying that she had been sick only two or three weeks, during which time her principal symptom had been dyspnœa. Her husband however, an intelligent man, stated that she had been loosing flesh and strength for six months, that for three or four weeks she had complained of dyspnœa and pain in the precordial region, and of cough, and that she had not menstruated for three or four months.

On examination of the precordial region, there was found dilatation over this region, but there was also a curvature of the spine: marked dulness on percussion over the same region, occupying a space four inches in length and three in breadth. The action of the heart was superficial and strongly marked. By auscultation a double rasping sound was heard over the heart, *so loud as to be distinct, when the ear was held at least two inches from the chest;* a distinct vibratory thrill also existed over the same region. Pulse small and feeble: respiration laborious: no fever. The patient died in about three days.

Post-mortem Examination. On opening the chest, to the infinite surprise of all who had seen the case, the heart was found perfectly normal in all its parts, and the pericardium perfectly healthy. The liver was enlarged and tuberculous: the left lobe by enlarging upward, had pressed up the diaphragm against the heart, so that this organ was elevated at least an inch above its natural position. The cavity of the thorax was much diminished by the curvature of the dorsal vertebræ: the structure of the lungs was healthy.

The above case was exceedingly instructive to me, by teaching me the importance of a careful examination not only of the condition of the surrounding organs in cases of supposed disease of the heart, but also that the symptoms of enlargement, and those of valvular disease as they are commonly understood, may be present in their highest intensity, and yet no such disease exist. Still the physical signs that presented themselves, were perfectly explained by the appearances noticed on post-mortem examination; the curvature of the spine, producing the dilatation over the precordial region, (no attention was paid to notice if the intercostal spaces were pushed out or not,) the enlargement of the left lobe of the liver upwards, accounting for the dulness on percussion, and perhaps also assisting in the dilatation. It will also be remembered that the rough and tuberculated condition of this latter organ, brought in contact with the heart through the intervention of the diaphragm, would explain the production of the grating sounds and the vibratory thrill. This is just one of those cases which if imperfectly examined, tend to bring auscultation into disrepute: for myself, I am sensible that I did not examine the case accurately, and that the fault was in this alone.* I neither ascertained with precision the maximum point of the morbid sounds, nor the direction in which they were transmitted. The subsequent cases will show that these important points were no longer neglected, and that thus the diagnosis acquired a degree of certainty every way satisfactory.

The most remarkable case of enlargement of the heart, that has ever fallen under my observation, was the following. It was complicated with other organic changes, as with slight valvular disease; but the enormous size of the heart rendered the physical signs of enlargement very distinct; and it is chiefly for the purpose of illustrating this point, that I introduce the case.

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* It is quite possible that the above case, even if examined with the closest attention, might have been mistaken for a chronic pericarditis with effusion of false membranes.

Case II.—Great enlargement of the heart; chronic pericarditis: ossification and imperfect closure of the aortic orifice.

Leonard Benjamin, aged 17 years, a negro servant of Dr. Detmold, tall and rather slender for his age, was attacked three years ago with pain, swelling, and difficulty of motion in one knee. This affection, probably of a rheumatic character, after continuing for four weeks, was suddenly transferred from the knee to the left side about the precordial region; here it remained constantly and with considerable intensity for six months or more; indeed it has continued until the present time, with more or less intermission. After having been confined for seven or eight months, he became so far improved in health, as to return to his occupation. It would appear, although his own account of his situation is far from being satisfactory, that he continued to suffer principally from dyspnœa, until seven or eight months since, when palpitation of the heart first attracted his attention, which with the dyspnœa has continued to increase. For five or six months past, he has noticed occasional swelling of the feet, which has also affected the face; for several months he has had cough with expectoration, and has emaciated slightly.

February 22d, 1840. Patient confined to his room; emaciation considerable: marked œdema of both lower extremities, extending slightly to the trunk: moderate effusion in the cavity of the peritoneum; right lateral curvature of the dorsal vertebræ.

On examining the precordial region, marked dilatation and dulness on percussion were found to exist there. The dulness extended, vertically, an inch above the nipple, and transversely, from a little beyond the junction of the cartilages and the sternum on the right side, to the point at which the apex of the heart was perceived. The apex of the heart struck one inch outside and two inches below the nipple, between the sixth and seventh ribs. Absence of the respiratory murmur over the precordial region. Action of heart superficial, accelerated, tumultuous, with much impulse, although the patient remained quiet in bed. Pulse 112 and regular, but sharp, abrupt, of considerable fulness and strength. The chest sounded well on percussion, except over the region of the heart; universal sibilant and sonorous rhonchi; respiration 36.40: cough.

Bowels regular; urine scanty; liver extends to an inch and a half of umbilicus. Moderate ascites.

Diagnosis.—Enormous enlargement of the heart.

A more full examination of this case led to the inference, that other organic changes had taken place in the heart. Over the apex, the contraction of the ventricles was attended by a distinct creaking and rather musical sound, which gradually disappeared as the stethoscope was applied over the body of the organ. Add to the diagnosis, *Rheumatic pericarditis, with formation of false membranes.*

Over the central portions of the ventricles, no morbid sounds were heard, the natural sounds being however rather more distinct than usual. But on applying the stethoscope over the centre of the sternum, (the region of the aortic valves,) both sounds of the heart were masked by a rough grating sound, the first quite marked and prolonged, the second short and feeble, but distinct. On receding from this point, either in the direction of the aorta, or over the body of the ventricles, these sounds gradually disappeared.

Roughness, without marked contraction of the aortic orifice; slight insufficiency of the aortic valves.

The patient was bled largely without inducing faintness: he was purged frequently by jalap and super tart. potass, and took every six hours the pulv. digitalis, to which calomel and squills were afterwards added. Under this treatment the symptoms, especially the dropsical effusion, were somewhat alleviated.

March 10th. Patient for a day or two past more oppressed; distress referred to ensiform cartilage of sternum; respiration 48, rather irregular. Complains more of palpitation: action of heart irregular, tumultuous: pulse irregular, but of good strength, 85 to 90 a minute. Dropsical effusion increasing. Sibilant and sonorous rhonchi all over posterior portions of the chest, except at the lower portion of the right lung where there exists a fine crepitant rattle; skin cool; no chill; no pain in side. Complains of dizziness; last night slight delirium; bowels regular. V. S. ℥iv: repeat the powders of Cal. Sq. and Digitalis every three hours: diet. Under this treatment, the patient became somewhat relieved, the crepitant changed to the sub-crepitant rattle, and the dropsical effusion again diminished a little. The Pul.

purgans, which given every other day produced moderate evacuations without relief, was changed to the Elaterium, which produced free watery stools, still without material relief to the symptoms.

March 16th. Yesterday the patient experienced several paroxysms, marked by apparent cessation of the action of the heart, and by very laborious respiration, continuing about a minute, and recurring every few hours. Pulse 98, regular, sharp and small; respiration 32; lies with the head rather low as usual. He suddenly died during one of the above mentioned paroxysms, on the morning of the 17th. Repeated examination indicated no material change in the physical signs during the progress of the case.

Post mortem examination. Six hours after death.

Œdema of the lower extremities and of the face; considerable emaciation.

Chest. Pericardium universally and closely adherent to the heart by old adhesions. Heart enormously enlarged. Weight with pericardium and 1½ inches of the aorta attached, 25½ oz. avoirdupois. Length, four inches (Fr.) Breadth, five inches. Thickness, two inches, six lines.

Circumference of cavity of left ventricle,	6 inches.	
Depth, “ “	4 “	
Thickness of walls “		6.9.4 lines.
Circumference of aortic orifice,	2 “	6 “
“ pulmonary orifice,	2 “	7 “

The right side of the heart was full as much dilated as the left. The walls of the right ventricle measured 3.3.3 lines. The auricles were also enlarged in proportion to the rest of the heart: the lining membrane of the left auricle was thickened and opake, and sprinkled with small vegetations and a few atheromatous spots. All the valves appeared healthy except the aortic valves: a small but prominent osseous deposit was situated directly behind one of these valves, so as to be covered by it. Another of the valves presented a small true aneurismal sac, the convex surface of which looked towards the ventricle. Finally, the third valve presented an irregular and slightly indented edge just opposite the osseous deposit, so that actual insufficiency of the valves existing, the regurgitating current would pass directly over this rough surface. The heart contained very few coagula; but on dividing the great veins, much uncoagulated blood gushed out. The aorta appeared healthy. The middle lobe, and a portion of the middle third of the inferior lobe of the right lung were hepatized. This inflammation was more dry and firm than common, and the surrounding lung was very little if at all congested. The left lung was healthy, and very free from congestion. No effusion or adhesions in the cavities of the pleuræ. Bronchi healthy.

Abdomen. Moderate ascites. The mucous membrane of the stomach and small intestines was much congested; most marked however in the upper portion of the tract; membrane rather soft, but perhaps not unnaturally so. The small intestines contained thin greenish and yellowish fœcal matter and considerable mucus;—the large intestines were healthy, and contained thin but healthy fœces. The liver was much enlarged and congested; spleen, small and dry. Mesenteric veins very little congested.

Brain not examined.

The most remarkable feature in the case just recorded, is the enormous enlargement (hypertrophy and dilatation) of the heart, the evidences as well as extent of which wer eclearly indicated by the physical signs during life. There were also, in this case, some circumstances which might have led us into error in estimating the value of these signs. The dilatation over the precordial region might have been induced, no doubt it was so to a certain extent, by the curvature of the spine; but this would not account for the marked and extended dulness on percussion, and absence of respiration which existed over the same region. But it may be asked, might not the liver which was much enlarged, have extended itself upward so as to create this dulness? Case I. shows clearly this may happen. The best means of avoiding an error of this kind, is to ascertain the point to which the liver extends upwards, by percussion of the right side of the chest, and afterwards estimating its level on the opposite side. It commonly happens, I believe, that the liver descends into the cavity of the abdomen when it enlarges; but there are striking exceptions to this rule.

Again we notice in this case, the existence of a chronic endopericarditis indicated by the formation of organized false membranes in the pericardium, and by vegetations upon the internal surface of the left auricle. The physical signs of this affection, as well as those of the valves, will more properly occupy our attention in treating of the morbid sounds of the heart. I wish here only to express my conviction, that the starting point in the whole series of organic changes which were noticed after death, was *rheumatism*, which becoming transported from the knee to the membranes of the heart, was at the onset and under proper treatment a perfectly curable disease. The case also illustrates another fact, viz. the almost invariable dependence of organic disease of the heart, *before the adult period* upon rheumatism. Among many cases of this kind that have come under my notice, I believe one only was an exception to this rule.

We are now led to examine another class of phenomena, which if not equally important in the diagnosis, are certainly of great use in directing our inquiries. I refer to the *rational signs* of enlargement of the heart, or the disturbances of its functions. We are led to suspect disease in an organ from observing some derangement in its functions; and conversely, the absence of all functional derangement is commonly regarded as evidence that no organic disease exists. But neither of these propositions are without numerous exceptions, and this is especially true in relation to the former. But still more, these functional disturbances may not only exist without organic disease, but even when dependent upon this cause, they present no very strong points of difference to aid us materially in the diagnosis. Hence would appear the importance of never venturing a conclusive opinion without a careful examination of the precordial region in relation to the physical signs enumerated in the preceding paragraphs, at least in the earlier stage of disease of the heart: in advanced cases, when dropsical effusions have supervened, when the powers of the constitution have given way, when the characters of organic disease are even stamped upon the countenance of the patient, there would be little difficulty in forming an opinion independently of the physical signs.

Notwithstanding this difficulty in distinguishing between organic and functional affections of the heart during the earlier periods of their progress, by the rational signs alone, still there are certain points which we can sometimes seize upon, and which will justly influence our opinion. There is in the early stage of organic disease, a *concentration* of the symptoms, by which I mean that the organ affected suffers alone, the sympathies or neighbouring or remote organs not being immediately called into action. The duration of this period may vary greatly in different cases, but it seems to me a capital point to ascertain where the disease commenced as indicated by a simple disturbance of function. It is true that organic changes are sometimes first indicated by the functional disturbance of remote parts; this is particularly true in relation to organic changes in the brain, but I believe far less so in relation to the heart.

Again the *permanence* of the symptoms is a point important to remember in the diagnosis of organic from functional affections of the heart, as indeed in all the other organs, and to this may be added their *progressive* character. Thus constant pain in the head, beginning insidiously and advancing regularly, increases the probability of organic disease of the brain, a constant and unremitting cough, the probabilities of organic disease of the lungs; and so it is with the heart. In organic disease, the symptoms begin and become fixed, they become to the diseased organ what the natural functions are in health, a part of its existence.

Undoubtedly in the progress of every organic disease, there is a period when it does not reveal itself by physical signs. A tumour, which in its advanced stage, may have attained a size sufficient to awaken astonishment, was once too small to be detected by the closest examination, and so with enlargement of the heart—its earliest period cannot be revealed by any of the physical signs we have enumerated. Still the real difficulty is not so great as it might at first appear, for so insidious is the early stage of this disease, that the opinion of the practitioner is seldom asked before it is sufficiently developed to be revealed by these signs. Such a case may however present itself; then, as already remarked, the concentration of the symptoms in the heart, the absence of previous disease in other organs, the permanent and progressive character of these symptoms, the known operation of causes which often induce cardiac disease, may excite well founded fears, although they will not warrant a positive opinion — we must wait.

Cases of functional derangement of the heart, in which the fear of organic disease exists, are very common in the higher walks of life ; they probably constitute the most numerous class. Dr. Hope, who has enjoyed much experience in this class of diseases, remarks : " So common are they, that of those who consult in private practice for supposed organic disease of the heart, I have found one half at least exempt from that malady."

Many of these cases are preceded by what are called, somewhat indefinitely, *dyspeptic symptoms*, but which if examined in relation to their pathological characters, will be found to be dependent upon an irritable or even inflamed condition of the mucous membrane of the stomach, indicated by pain and fulness after eating, tenderness and heat in the epigastrium, with nausea or vomiting. The variable character of the sympathetic affection, and the marked despondency and anxiety as to the final termination of such cases, are commonly highly characteristic of their nature. Mr. Parker,* a late English writer, has investigated this subject with great ability; and to his work I would refer for the best practical information in relation to it.

The affection known as *spinal irritation*, is capable of exciting the most violent symptoms of functional disturbance in the heart, more severe indeed than those ordinarily attendant upon even the most advanced cases of organic disease. I lately had an opportunity of attending a case of this kind with Dr. Griscom of this city, to whom I am indebted for much valuable information on this subject. In this case the sudden and violent accession of the symptoms assuming a paroxismal character, their recurrence at periods when organic affections of the heart are the least complained of, especially when the patient was quiet in bed, and especially the entire absence of all the physical signs of enlargement established the diagnosis.

A somewhat similar case has been related to me of a lady, who had long been suffering from what a large number of physicians whom she had consulted, regarded as organic disease of the heart. At length, she was so fortunate as to consult a gentleman who suspected that the symptoms might be dependent upon spinal irritation, and on examining the dorsal vertebræ marked symptoms of this condition were found. By appropriate treatment of this affection, by leeches and counter-irritation, the symptoms of cardiac disease disappeared, and the patient has since enjoyed perfect health.

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* The Stomach in its Morbid States, &c.—By Langston Parker, Surgeon, &c.

Functional derangement of the heart appears to be in numerous cases dependent upon the operation of some more general cause, the nature of which is not very clear. I have observed several such cases among medical students, especially about the close of the term after a constant and protracted devotion to their professional studies. Such cases are not necessarily connected with dyspepsia, or with plethora, or with any very appreciable local disease. They generally yield to a treatment adapted to the circumstances of the case, as an abandonment of study, free exercise in the open air, simple diet, and the carbonate of iron. It is worth noticing in these cases, that the immediate effects of active exercise are decidedly agreeable to the feelings of the patients.

The following case will illustrate this form of functional derangement of the heart:

Case III— A gentleman about 24 years of age, a student at college, came under my care about two years ago, with symptoms supposed to be connected with disease of the heart. The symptoms were developed while he was leading a very studious and inactive life; he had also been much addicted to the use of tobacco, and to the occasional practice of masturbation. The symptoms of the case are an occasional interruption amounting sometimes to an almost complete cessation of the action of the heart, coming on commonly when quiet in bed, and followed by violent palpitations; by periodical symptoms resembling those indicating a congestion of the brain, but which are probably not connected with this condition. With these symptoms, the general health is not materially affected, the patient retains his flesh and strength, can exercise freely without oppression in his respiration or other inconvenience. Notwithstanding the long duration of the symptoms, indeed they had been present for a considerable period before I saw the patient, and after repeated examination, I have never been able to detect a single evidence of enlargement of the heart. Dr. F. U. Johnston, who saw this case with me, fully agreed with me as to its nature.

I have also met with cases of functional disturbance of the heart, which appeared to be induced by a very different combination of circumstances from those last enumerated, especially by long continued and violent exercise about the period of puberty.

Case IV. — A young gentleman æt. 17 years, of rather delicate frame, of quick lively temper, and accustomed to much indulgence from his parents, whom I attended in consultation with Dr. G. Smith of this city, became affected with what were considered dyspeptic symptoms, when about 12 years old. He was sent to Europe for his health, and there consulted M. Roux of Paris, and Sir Benjamin Brodie of London, who regarded his symptoms as of this character. These symptoms after a time either subsided entirely, or attracted very little attention. After some time he conceived the extravagant idea that the *summum bonum* of life, was to excel in physical strength. He joined a fire company, he constantly practiced the most athletic exercises, such as playing at quoits, and riding furiously on horseback. He is irregular and hasty in his meals, and drinks a good deal of porter with the idea that this will give him strength. About 18 months before I saw him, he began to complain of palpitation, which has continued to increase. He complains of occasional pain in the precordial region, and of a feeling of stoppage in the action of the heart, with oppression, but without constant dyspnœa. He has never had œdema of the feet. The pulse is regular and of good strength; the action of the heart is strong but regular, and manifestly increased by three or four full inspirations. A careful examination of the precordial region could detect no signs of enlargement of the heart; there was, however, a bellows sound masking the first sound of the heart over the region of the mitral valves. The general health was good. The duration of the symptoms for 18 months, without any evidence of enlargement of the heart, induced us to form the opinion that no organic disease existed: the bellows sound over the mitral valve accompanying the contraction of the ventricles, I explained by supposing an imperfect closure of the corresponding orifice from over distension of the heart. The patient soon afterward sailed for England, not however without being materially benefited by appropriate treatment. While in London he again consulted Sir Benjamin Brodie, who gave him the opinion that no organic disease existed.

Having thus examined the mode of distinguishing organic disease of the heart in general from mere functional disturbance of that organ, we might naturally pass to the consideration of the diagnosis of the different forms of enlargement of the heart. But this question is one of less interest than it might at first appear. First because, as already stated, the two forms of enlargement, viz. hypertrophy and dilatation are commonly united; and secondly, because if accurately determined, which is far from being always easy, the practical advantage is not very important. I pass therefore to the study of some of the varieties of *valvular disease*, which forms, I conceive, one of the most beautiful problems in medical diagnosis: and here, as in the case of enlargement, our chief reliance must be placed upon the physical signs, by exposing the precordial region and applying the stethoscope and the finger to the region of the valves. Many may be disposed to question the possibility of the accurate diagnosis of valvular disease, denying that we yet understand the mechanism of the natural sounds of the heart, and still more of those that are morbid. I am ready to admit that there are points yet undetermined in relation to these matters, but I am far from thinking that the subject is involved in the obscurity in which some cloud it. I believe that the ground-work is already finished, and that every one who will take the pains to study and compare the numerous and well digested experiments that have been performed,* and the immense number of pathological facts that have been collected,† will necessarily be brought to the same conclusion. It is impossible to present even an outline of these on the present occasion. I will therefore simply state in the form of distinct propositions, such facts in relation to them as I think are fairly established.

I. The *first sound* of the heart, or that accompanying the systole of the ventricles, is a compound sound, and not simple, as most experimenters on the action of the heart have supposed it to be. Experiments seem to prove, that it results from the striking of the apex against the ribs, from the sudden tension of the mitral and tricuspid valves, and probably also from muscular contraction.

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* See vol. ii. of this Journal, p. 417, &c.

† Consult in particular Bouillaud Traité Clinique des Maladies du Cœur.

II. The *second sound* of the heart, or that accompanying the diastole of the ventricles, is caused by the sudden tension of the sigmoid valves, caused by the falling back upon them of the column of blood in the aorta and pulmonary artery — this point is placed beyond dispute.

III. All the morbid sounds heard over the region of the valves, may be classed under the general name of *bellows sound:* the sound of grating, sawing, filing, and the musical sounds, are but degrees of this primary sound, and are produced by the same mechanism.

IV. The principal cause of this bellows sound, so far as it is connected with organic disease, is an impediment to the free passage of the blood through a given orifice by which the current of the blood and the parietes at the seat of the obstruction are thrown into vibrations which generate a bellows sound perceptible to the ear, and occasionally, when these vibrations are intense, *a thrill* as distinctly perceptible to the touch.

The physical signs then of valvular disease, are the bellows sound and its modifications, and the thrill communicated by the touch. But to indicate the precise seat and signification of these signs in particular cases, several important points must be remembered. In the first place it must be clear, that the morbid sound or thrill will have its *maximum of intensity* as near as possible to the precise spot where it is generated; and in the second place, that they will be transmitted most readily according to the capacity for transmitting vibrations in the surrounding parts. It is important then to know the precise seat of the different valves, as well as the relative capacity of the surrounding parts for the transmission of sound.

In a practical point of view, the difficulty attending this subject is much diminished by remembering that valvular disease is almost always confined to the *left side* of the heart. We know very little of disease of the tricuspid and pulmonary valves; such cases are indeed on record, but they are very rare. It is then with the aortic and mitral valves that we are interested in the present examination.

The diseases of these valves considered in relation to their physical signs, may be arranged in two divisions. 1st. Such as produce an impediment to the free passage of the blood through the heart, by an obstruction narrowing its orifices. 2d. Such as cause this impediment by producing an imperfect closure of these orifices, so that the blood which should be forced onward, regurgitates.

I. An *obstruction of the aortic orifice* is indicated by a bellows sound, having its maximum over the seat of the aortic valves, viz. at the centre of the sternum between the cartilages of the third and fourth ribs; it accompanies, and if intense, masks the first sound of the heart, and is transmitted in the direction of the current upwards through the aorta, and not downwards over the ventricles.

II. An *imperfect closure of the aortic valves* permitting regurgitation, will be indicated by the morbid sound having its maximum over these valves at the point already indicated, but it will accompany, or mask, the second sound of the heart.

III. An *obstruction at the left auriculo-ventricular orifice* is indicated by the morbid sound having its maximum over the seat of the mitral valves, viz. between the cartilages, or the third and fourth ribs, at their junction with the sternum; it accompanies the ventricular diastole and the second sound of the heart, and is transmitted downwards over the ventricles.

IV. In *imperfect closure of the mitral valve*, the morbid sound having its maximum over this valve, will accompany the first sound of the heart, and be transmitted downward along the chordæ tendinæ, and not in the direction of the auricle, the walls of which are not sufficiently tense to transmit vibrations.

As a corollary to the above propositions, we may add, that *morbid sounds generated by the friction of false membranes in the pericardium*, and resembling the bellows sound and its modifications, always accompany the contraction of the ventricles, and have their maximum of intensity at the apex of the heart.

A moment's reflection upon the anatomical structure and the physiological action of the heart, in connexion with the above propositions, will not, I think, fail to convince us how perfectly they agree with the well established laws of physics in relation to the generation and transmission of sound. What has been stated in relation to the bellows sound and its modifications, applies equally to the *thrill* communicated to the touch; it obeys the same laws, but is only recognized where the vibrations are intense in their character.

But the inquiry may be properly repeated here, are there no exceptions to these propositions? May not the bellows sound and its modifications, the vibratory thrill exist in certain, indeed in numerous cases, without valvular disease? This question requires a careful examination, and from not being satisfactorily stated, has induced many to discredit what is really true and valuable. In the first place as to the bellows sound, I consider it of the greatest importance to study it in its two relations as connected with obstruction to the direct flow of blood, or with regurgitation of that fluid. In the former case, we must admit that different and temporary causes, such as increased action of the heart, or an accumulation of blood in this organ, by creating an actual, yet often transient disproportion between the cavities and their corresponding orifices, may create all the physical conditions necessary to the production of the bellows sound. But I am satisfied that much more than this is true; that permanent organic disproportion often exists which is not detected even on post-mortem examination; the valves and their orifices being pronounced to be normal, and thus the bellows sound heard during life, and often of a permanent character, comes to be regarded as of little value in the diagnosis of organic disease. But this is a great error. We are too much in the habit of considering the valves and orifices of the heart as normal, when we are unable to detect by *the eye merely*, any evidence of disease. If there are no vegetations upon the valves, no ossific deposits, no shrivelling or apparent contraction, or loss of substance — if the finger is passed into an orifice, and no apparent obstruction is found, both are pronounced in a natural condition. But the truth is, permanent obstruction, or well marked insufficiency of a valve, may exist with all this apparently normal condition of things. A ventricle, for instance, becomes enlarged, admitting more blood into its cavity, its orifices remaining natural in size — here is at once a permanent organic disproportion of parts, an obstruction to the flow of blood, and a consequent bellows sound dependent on an organic cause. The reverse of this sometimes happens; a ventricle enlarges, and its orifices enlarge in proportion, but the valves remaining unchanged can no longer close the enlarged orifices, regurgitation of the blood ensues, and the bellows sound is generated as when a valve is partially destroyed by some well marked organic change. It is only by measuring carefully the orifices, the valves, the cavities, and the substance of the heart, and carefully comparing these with the normal standard, that we are warranted in the assertion that no permanent organic change has taken place.

Again, the physical signs of valvular disease, considered in relation to their temporary causes, already alluded to, and which are liable to deceive us, lose much of their obscurity if we take care to study them in relation to their *intensity* and their *permanence.* Thus the higher degrees of the bellows sound, the grating and sawing, filing and musical sounds, are probably always connected with organic changes. And the duration of these sounds, and even of the simple blowing sound under all the circumstances favourable to their disappearance when dependent upon some temporary cause, as blood-letting, rest, &c. is almost quite as certain an indication of the same change. Circumstances indeed frequently change the character of the sound, while they do not destroy it; thus a sound from being rough, may become softer, from being loud, may become more feeble, but still it continues to be heard. It may thus easily happen, that a case examined but once, and even with attention, may lead us into errors which repeated observation could not fail to correct.

The following cases will serve to illustrate some of the more common and important forms of valvular disease. In all these cases, it will be observed the heart was much enlarged, and by a combination of hypertrophy with dilatation. This fact is in accordance with the statement already made, that valvular disease is rapidly, and almost with certainty, followed by enlargement of the heart. Notwithstanding, however, the complex character of the cases, no difficulty existed in distinguishing their elementary forms, long before their fatal termination.

The *valves of the aorta* are very frequently the seat of ossific deposits, which obstruct the flow of blood from the heart, and generate the bellows sound. In such cases it is commonly some of the higher modifications of this sound, as the grating, sawing, &c. sounds that are heard. These deposits in some instances do not materially diminish the size of the orifice of the aorta, but tend rather to render its sides rough and unequal. Such cases can commonly be recognized during life, by a proper attention to all the attending circumstances. Case II. (Benjamin) already recorded, is a well marked illustration of this fact. In this patient a distinct grating sound over the aortic valves, synchronous with the contraction of the ventricles and transmitted along the course of the aorta, existed during the whole period of attendance; the fulness of the pulse forbade the idea that any marked obstruction of the flow of blood existed from contraction of the orifice in question. In cases where contraction of the aortic orifice is supposed to exist from the physical signs found in the heart, much may be gained by this careful comparison of the action of the heart with the state of the pulse. In such cases the heart will be found acting forcibly and tumultously, while the pulse is small and contracted.

Imperfect closure of the aortic orifice, is also a very common form of valvular disease. This condition is sometimes the simple result of enlargement of the aortic orifice, the valves retaining their natural dimensions. But a more common cause is a change in the valves themselves. Sometimes a valve appears shrivelled and contracted throughout its whole extent; in other cases the free edge is principally affected, a portion of the substance of the valve being there destroyed. I conceive that the most common cause of these changes is the atheromatous deposit under the lining membrane of the valves, which by exciting inflammation, produces in some cases a thickening and shrivelling of the valves, in others, an actual loss of substance. The following case is an example of the first of these lesions. The case is also a very interesting one as presenting three distinct forms of cardiac disease.

Case V.[*] — *Enlargement of the heart: imperfect closure of the aortic orifice: True aneurism of the ascending aorta.*

William Carroll, a seaman, æt. 30 years, of moderately strong constitution, not subject to rheumatism, had suffered from palpitation for 10 or 12 years, but had been able to continue his occupation until four months since, when on his arrival from sea, he contracted a cough with dyspnœa, which was soon followed by œdema of the lower extremities. The dyspnœa and œdema have never ceased, although at times they are more marked than at others, but the cough soon left him.

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[*] For the opportunity of observing this, as well as many other cases of organic disease of the heart, I am indebted to Dr. William H. Maxwell of Syracuse, formerly resident physician in the New-York Hospital.

The following was his condition September 10th, 1838. No complaint of pain; dyspnœa on going up stairs: respiration 24: pulse 104, rebounding, with a thrill.

On examining the precordial region, it was noticed that the apex of the heart struck half an inch outside the nipple and between the seventh and eighth ribs; evident dilatation over the precordial region; marked flatness on percussion (three inches by four;) respiration still heard over this region; rythm of the heart natural; impulse moderate.

Diagnosis. Enlargement of the heart. On applying the stethoscope to the precordial region, the first sound of the heart was natural; but the second sound was marked by the sound of a file having its maximum of intensity over the region of the aortic valves; this sound could be distinctly traced along the course of the aorta, and was well marked when the patient had passed the night quietly in bed. Add to the diagnosis, *imperfect closure of the aortic orifice with regurgitation of blood during the diastole of the ventricles.*

If now the patient be made to exercise a little, a distinct and circumscribed pulsation is noticed to the right of the sternum, between the cartilages of the third and fourth ribs and one and a half inches to the right of the median line. On applying the stethoscope, two sounds were heard, the first, a loud bellows sound synchronous with the impulse of the heart; the second, the sound of a file synchronous with and similar to that already noticed over the aortic valves, but more distant and feeble: dulness on percussion over the seat of the pulsation. *Aneurism by Dilatation of the Ascending Aorta.*

I continued to examine the patient at different periods, and invariably found the same physical signs to be present: the rational signs were, however, constantly progressing. Dec. 12th, three months after the above history was written, the patient presented the following condition. He lay in bed with his head much raised: countenance pale and anxious: eyelids œdematous: œdema of the hands, feet and trunk. The physical signs remain as above described, except that the apex now strikes two inches, instead of half an inch, outside the nipple, indicating that the enlargement of the heart has much increased. The degree of dulness over the precordial region could not be indicated, owing to a slight effusion into the left pleural cavity. The sound of the file over the aortic valves still existed, extending upwards along the course of the aorta, while less than an inch to the left, over the seat of the mitral valves, no such morbid sound existed. On examining the seat of the supposed aneurism to the right of the sternum, a pulsation and double sound were still distinct, but the first sound had lost its bellows character and become a simple impulsive sound, and the sound of the file from the aortic valves was no longer transmitted to this distance; the second sound of the heart was heard. The pulse was about 100, and regular; the stroke was remarkably quick and of good strength, with a slight rebound, but no thrill. Respiration 24: sibilant and sonorous rhonchi over the chest: signs of slight effusion into the cavity of the left pleura.

The patient died, after a protracted agony, on the 25th, 12 days after the last report.

Post mortem examination 15 hours after death. General anasarca.

On removing the sternum, after sawing through the ribs, the heart was found in nearly a horizontal position, extending far beyond the nipple to the left, and at least three inches to the right of the median line. The opposing surfaces of the pericardium were universally united by old adhesions, and an osteo-cartilaginous plate one inch long and half an inch wide, lay imbedded in the false membranes upon the surface of the right ventricle. The size of the heart was enormous, the enlargement being confined principally to the left ventricle, which was hypertrophied and still more dilated; its cavities contained some recent and old polypi, and that of the left ventricle a quantity of air.

Length of heart, . . .	5 inches	4 lines. (Fr.)
Breadth	4 ..	6 ..
Circumference of cavity of left ventricle,	6 ..	7 ..
Depth	4 ..	5 ..
Thickness of the parietes	..	6.9.4 ..
Circumf. of cavity of right ventricle,	7 ..	
Depth	4 ..	

Thickness of parietes of right ventricle,			3.4.1½ lines.	
Circumference of aortic orifice,	3	..	3	..
.. .. pulmonary orifice,	3	..	2	..
.. .. left auriculo-ventricular orifice,	3	..	10	..
.. .. right	4	..	9	..

The different valves appeared healthy and capable of performing their functions, a few vegetations only existing upon the mitral valve, until the aortic valves were examined. They were much changed in their structure, being thickened, hard, and irregular in form, and having their lower surface, that looking toward the ventricle, covered with vegetations which extended downward into the ventricle covering its lining membrane for at least an inch. The posterior of these valves was most affected; it was more covered by vegetations, was much shrunken and contracted, and quite unable to perform its part in closing the orifice of the aorta.

The aorta, when opened, presented a few atheromatous spots: its coats were generally thinned. Two inches above its origin it was formed into a pouch capable of containing half a hen's egg, which occupied the right lateral half of the vessel. The coats of the artery were here particularly thin and very dilatable.

The lungs adhered firmly to the ribs and to the pericardium, by old adhesions. There was effusion of serum into both pleural cavities, but this was more abundant on the left side. The lungs were congested and inflamed in the first degree.

Considerable effusion into the cavity of the peritoneum. Liver somewhat congested.

There are some points in the history of this case which may deserve comment. The valvular disease was distinct, and clearly recognised both during life and after death. But the opposite surfaces of the pericardium were united by old adhesions which did not reveal their existence by either rational or physical signs during life. At the time this case was examined, this fact, especially in relation of the physical signs, did not appear to me singular, inasmuch as from the intimate union of the opposite surfaces, there could be no friction between them; a condition supposed to be necessary to the production of morbid sounds in the pericardium. But the case of Benjamin, observed since, appears to me to prove that such morbid sounds may be generated, even in cases where intimate union of the pericardium is found after death. In this case, a permanent creaking sound was heard over the apex of the heart, synchronous with the impulse. I can only explain this by supposing that the heart, enormously enlarged, was thus brought in contact with the pleura lining the left side of the chest, and by a surface rendered unequal by the thick deposit of firm false membranes. That the *immediate* contact of a rough surface is not necessary to the production of a morbid sound, is proved by what was observed in Case I., in which the diaphragm, the pleura, the peritoneum, &c., intervened between the rough surface of the liver and the heart.

Again, as to the aneurism of the aorta, as I do not intend, on the present occasion, to enter upon the diagnosis of the different forms of aneurism, I will only remark, that the idea of its being a *true* aneurism of the ascending aorta was founded upon these facts: 1st. Its position. 2d. The circumscribed character of its pulsations. 3d. The possibility of distinguishing the second sound of the heart over its seat.

Case VI.—Enlargement of the Heart. Partial destruction of the aortic valves. Hydrops Pericardii.

Bryant, a seaman, æt. 32 years, of stout frame and good constitution, was attacked about six years ago with inflammatory rheumatism, which confined him to his bed for six weeks. Six months elapsed before he had perfectly recovered: since that period he has been subject to occasional pain in the joints, which continue only a day or two. About a year since, Jan. 1838, he was attacked with cough and dyspnœa: the cough continued only three weeks, but the dyspnœa lasted for five or six months, until the warm weather commenced. He remained perfectly well until the present winter, Nov. 1838, while at sea on the return of a long voyage. He then began to complain of debility and dyspnœa, but without cough or fever. After two or three weeks he began to notice palpitation. The middle of December, he entered the Hospital with what was considered pneumonia of the right lung: there was pain in the right side; the pulse was 160; there was œdema of the lower extremities: he was thought to be dying.

Jan. 26, 1839. Aspect pale, lips blue. Still complains of pain in right side, not increased by inspiration: dry, but not urgent cough: respiration not much accelerated: dulness on percussion, feeble respiration, egophony over the posterior portion of the right lung. *Effusion in the cavity of the right pleura.*

On examining the precordial region, the whole anterior portion of the left side of the chest appeared rather more prominent than the right. There was dulness on percussion over this region, extending, however, much beyond it, to an inch above and outside each nipple. On applying the hand to the precordial region, the action of the heart could not be felt, not even at the apex; but there was an indistinct thrill over the region of the valves, too feeble to be accurately marked. The respiration was heard very feeble over the region of the valves, but not at all over the body of the ventricles.

Diagnosis. Hydrops Pericardii.

On applying the stethoscope to the region of the valves, a double rasping sound was heard, having its maximum of intensity over the aortic valves. Both sounds could be distinctly traced along the aorta, the first more distinctly than the second. Over the region of the mitral valve, the first sound, or that accompanying the ventricular systole, became changed to a soft blowing sound, and was heard even over the body of the ventricles: the second sound, or that accompanying the ventricular diastole, examined over the body of the ventricles, became also soft and blowing, and finally ceased. Pulse 108: full and strong, without thrill.

Add to the diagnosis, *aortic orifice rough, without marked obstruction to the flow of blood: imperfect closure of the aortic valves.*

Feb. 20th. The patient has been progressively growing worse. There is a slight but constant disposition to œdema of the feet: the dyspnœa and oppression are increasing: he is now, however, suffering from a complication of bronchitis, indicated by a dry, prolonged, troublesome cough, and a mucous and sibilant rhonchus over the posterior portion of both sides of the chest: the flatness on percussion, &c., indicating effusion into the right pleural cavity, have disappeared. On examining the region of the heart, the evidences of valvular disease remained as at the first examination. But as the patient had just been exercising, especially by ascending two flights of stairs, the action of the heart was so much increased that I could, for the first time, feel distinctly the apex of the heart striking against the ribs. This point was far to the left of its natural position, being half an inch outside the nipple; the dilatation over the precordial region was as distinct as before.

Enlargement of the Heart.

May 17th, three months since the last report. The case has been progressing more rapidly than usual for three weeks past. Four days ago the respiration became much more oppressed, and the lower extremities more swollen. The patient is now moribundus: sitting up in bed: respiration very laboured, 42 a minute: countenance anxious and sallow, lips blue; jugular veins prominent, the right swelling out during each act of inspiration. He complains of severe pain about midway between the epigastrium and umbilicus; and on examining this region, the enlarged liver can be felt occupying the epigastric and right hypochondriac regions, and extending to an inch of the umbilicus. Over the region of the heart, all that could be heard was an obscure rumbling sound; the dulness on percussion over this region was not more marked than on former examinations. Pulse 130, feeble; hands cold; excessive œdema of the lower extremities. The patient died the following day.

Post-mortem examination 12 hours after death.

On opening the cavity of the thorax, the pericardium was found much distended with fluid; it contained at least a pint of serum, but no traces of pericarditis were noticed. Both lungs were found adherent to the diaphragm by old adhesions; they were both in the first stage of inflammation, passing in many points into the second stage: moderate effusion into the cavities of the pleuræ. The heart was considerably enlarged in all its parts, but more dilated than hypertrophied. Length of the heart, four inches one line (Fr.). Breadth, four inches.

Circumference of the cavity of left ventricle,			5 inches	6 lines.
Depth,	"	"	3 "	3 "
Thickness of the walls,	-	-		7.6.6
Circumference of cavity of right ventricle,			6 in. 6	"
Depth	"	"	3 " 3	"

Thickness of parietes of right ventricle, 4.1.1 lines.
Circumference of aortic orifice, 3 inches 1 line.
" pulmonary, 3 " 3 lines.

The valves of the right side of the heart appeared healthy, and sufficiently developed to close the corresponding orifices. The mitral valve was hypertrophied in its fibrous structure, as is common in cases of enlargement of the heart, but still perfectly capable of its natural functions. The aortic valves were thickened, but without morbid deposit in their substance. The valve most thickened, presented a considerable loss of substance upon its free edge, amounting to one quarter of the valve. The edge of the valve at this portion was smooth and firm, looking as if a part had been removed by a pair of scissors. This deficiency left an aperture about the size of a common goose-quill, when the valve attempted to close the aortic orifice.

The aorta examined internally, appeared wrinkled and irregular; elevated portions of different dimensions, evidently formed by a thickening of the internal coat, existed. Indeed the whole internal coat was more thick than natural, easily separated from the subjacent coat, and covered by thin, delicate and transparent false membranes. This internal surface was of a cherry red colour, more marked upon the elevated portions, and most so near the heart. The middle coat of the artery, retained its natural colour, but in some portions it was thin, and had lost its elasticity; again, under some of the elevated spots it appeared to be thickened. Half an inch above the origin of the aorta, a true aneurism had begun to form, and here the thinning and loss of elasticity in the middle coat were most apparent.

The liver was enlarged and congested, extending downward to an inch of the umbilicus. The spleen was six times its usual size, and was also much congested. Other organs not examined.

The most interesting feature in the case of Bryant, is the existence of a serous effusion into the pericardium, a long time before death occurred. Such cases present some of the most marked physical signs of enlargement of the heart, viz. dilatation, dulness, and absence of respiration over the precordial region. But these conditions were much more marked and extended than ever happens in simple enlargement of the heart, as will be seen by comparing the case just recorded with the other cases where nothing of the kind existed. But a much more certain and valuable indication in these cases, is the action of the heart. In simple enlargement, it is superficial, and the point where the apex strikes is readily felt. But in dropsy of the pericardium, the heart being pushed back from the parietes, its action can no longer be felt, and even to the ear, its sounds are distant and feeble. In the case before us, no action could be felt, not even over the apex, until after violent exercise the action of the heart became so much increased, as to force the apex to strike against the parietes far from its natural position, and thus to reveal the existence of enlargement of the organ.

We also notice in the above case, a satisfactory explanation of the morbid sounds heard over the region of the aortic valves. The first sound being connected with a rough condition of the aortic orifice from thickening of the valves, without marked obstruction to the flow of blood; the second sound being dependent upon the regurgitation of the blood from imperfect closure of these valves. This case then resembles that of Benjamin in these particulars, except that in his case, the roughness of the aortic orifice was caused by an ossific deposit: it resembles also the case of Carroll, in presenting an imperfect closure of the same orifice.

It will be recollected also, that during the latter period of life no morbid sounds were heard over the heart, except a confused rumbling sound. This was no doubt connected with an overloaded condition of the heart during the last days of life, and is noticed in other cases detailed in this essay.

I will also allude to the fine specimen of chronic aortitis which this case presented, and to the congested state of the abdominal organs, a common occurrence in similar cases.

Organic changes in the *mitral valve*, are more common than those of the sigmoid valves of the aorta, although the difference is not very great in this respect. Thus in 48 cases, organic changes dependent on inflammation, occurred in the mitral valve 29 times, in the sigmoid 25 times. In relation to ossification, the difference is more striking; thus in the same number of cases, ossification of the former valve occurred 10 times, while in the sigmoid it occurred only five times, making a difference of just one-half. With regard to the causes of these ossific deposits in the valves, much obscurity exists. It is commonly thought that old age is the most prominent cause; but this is more than doubtful. Thus in 12 cases of ossification of the valves, the medium age of the patients was 48 years only: in 28 cases of valvular disease not connected with the ossific deposit, but upon inflammation and other causes, the medium duration was 39½ years. In ossification of the aorta however, age appears to play a much more decided part: thus, in six cases of ossification of the aorta, the medium age was 58½ years, the minimum 40 years. I have, however, been frequently struck with the existence of ossification about the heart in comparatively young subjects. Not very long since, I examined the heart of a lady, æt. 31 years, in which the mitral valves was the seat of very extensive ossific deposits. In the case of Benjamin, æt. 17 years, ossification at the commencement of the aorta was noticed.

The organic changes in the mitral valve, like those of the aortic valves, create two distinct physical conditions of the parts involved; causing either an obstruction to the passage of the blood through its natural passage, or a regurgitation of this fluid. The changes produced in the physical relations of this valve, are by no means so easily determined by autopsic examination, as those of the sigmoid valves, owing to greater irregularity of form. This is particularly true in determining the existence of imperfect closure, a fact which can never be ascertained with accuracy if the heart is opened by dividing this valve, as it is commonly performed. In cases where this form of disease is suspected, the left ventricle should be freely opened, without touching the mitral valve; the corresponding auricle should then be opened and cut away to the level of the insertion of the valve. By holding the heart supported by its apex, and passing the fingers into the ventricle, the valve may easily be brought up into the orifice, and the fact of its being able to close it or not, accurately ascertained. In the aortic valves, their smooth and regular free edges cannot be affected in even a trifling degree, or their proper dimensions in any way materially affected, without at once attracting attention even after the orifice they close is divided.

I cannot find in looking over my case-books, a single case of obstruction of the left auriculo-ventricular orifice from disease of the mitral valve, sufficiently full and accurate in its details to merit an insertion here. The most recent case, I saw about two months since with Dr. Hoffman. In this, the orifice in question was reduced to a mere chink by ossific deposits in the mitral valve, which was extremely rigid from the same cause. Hypertrophy and dilatation of the right side of the heart also existed, with pulmonary apoplexy.

The following case will however illustrate fully that form of valvular disease dependent upon regurgitation of the blood, from inability of the mitral valve to close its corresponding orifice.

Case VII. Enlargement of the Heart: imperfect closure of the left auriculo-ventricular orifice from insufficiency of the mitral valve.

A SAILOR, æt. 40 years, muscular, and above the ordinary size, entered the New-York Hospital, having suffered from distinct symptoms of cardiac disease for six months, and with some obscure symptoms in the chest for several years. The lower extremities were very much distended by dropsical effusion; the distention of the scrotum from the same cause, had produced sloughing and exposure of the testicles.

The patient when I saw him, was sitting upright in bed: countenance pale and anxious: pulse, regular and full: sleep much disturbed.

On examination of the precordial region, it was noticed that the apex of the heart stuck two inches outside the nipple, and on a level with it, and that the dulness on percussion, and the dilatation over this region were very strongly marked ; impulse of the heart moderate; patient much exhausted.

Diagnosis: Great Enlargement of the Heart.

By the stethoscope, it was also noticed, that the first sound of the heart was marked by a loud and clear musical sound, having its maximum of intensity over the mitral valve, between the cartilages of the third and fourth ribs, at their junction with the sternum; this sound is heard, but more diffused over the left ventricle as far as the apex, while it extends comparatively but a little distance to the right of the sternum, or upwards in the direction of the aorta. Over the valves, occupying the space of half a dollar, there is also a distinct thrill communicated to the touch. The second sound of the heart was not distinctly heard.

Add to the diagnosis—*imperfect closure of the mitral valve, with regurgitation.*

The patient continued to live until the 24th, (10 days,) when he died after a prolonged agony, during which orthopnœa was constantly present: the physical signs remaining the same whenever they were examined.

Post-mortem Examination 12 hours after death. General anasarca; double hydrothorax, most marked on the right side: free edge of the left lung united to the pericardium by recent adhesions. Right lung pushed forwards and inwards, adhered also to the pericardium by recent adhesions, which covered its anterior surface, and were much thicker than those of the opposite side.

The position of the heart, was nearly horizontal; it was much enlarged, lying upon the diaphragm, and extending to the left beyond the nipple: but to the right it did not pass the median line. The pericardium contained about an ounce of serum, and a few old patches of coagulable lymph were noticed upon the surface of the right ventricle. The heart which was loaded with fat, and the ventricles filled with large clots of blood, on being emptied, weighed 1 lb. 6 dr. avoirdupois.

Length of the heart, four inches seven lines (Fr.) Breadth, five inches six lines.

Circumference of cavity of left ventricle, 7 inches.
Depth " " 3 " 8 lines.
Thickness of parietes of " 7.10.6 "

The right ventricle and both auricles, partook of this increased developement, but in a less degree.

Thickness of the walls of right ventricle, - 3.3.3 lines.
Circumference of pulmonary orifice, 3 inches, 6 "
" aortic orifice, - 3 " 7 "
" right auriculo-ventricular orifice, - 5 " 6 "
" left " 4 "

The different valves having become enlarged in proportion to the rest of the heart, appeared capable of performing their natural functions, except the mitral valve. Those on the right side of the heart were perfectly healthy; a few atheromatous spots existed upon the sigmoid valves of the aorta, without however producing obstruction, or imperfect play. The mitral valve was much thickened and enlarged, yet at one point it did not close the corresponding orifice completely, leaving an aperture with firm and rather rough edges about the size of a large goose-quill, through which the blood might regurgitate during the contraction of the ventricle.

There was a considerable effusion of serum into the cavity of the peritoneum. The other organs were not examined.

In the above case, besides the evidences of enlargement of the heart, we find a musical sound, which is a high degree of the bellows sound, and a vibrating thrill, having their maximum over the mitral valve and accompanying the ventricular systole, indicating a marked imperfection in the mitral valve permitting regurgitation of the blood. In this case it will be noticed, that the sound was not transmitted upwards with the current, as happens in other cases, the walls of the auricles not being sufficiently tense to transmit vibrations, but downward along the chordæ tendinæ.

There is anotherpoint of interest, viz. that the second sound of the heart was not heard at all. It often happens during the closing period of disease of the heart, that this organ becomes much congested with blood; overpowered by the intensity and irregularity of its own action, it finally becomes incapable of expelling the blood that enters its cavities. It is evident that in this state of things, the columns of blood in the aorta and pulmonary artery can no longer act upon the sigmoid valves, as during the free action of the heart, and consequently the second sound must become enfeebled, or entirely cease. The case of Bryant before detailed, illustrates this same point: during the protracted agony of that case, nothing was heard over the heart but a low rumbling sound. And in the case now before us, the orthopnœa, the dropsical effusion terminating even in sloughing of the scrotum, a very rare circumstance, and the great distension of the heart with blood, as noticed after death, sufficiently prove that this condition was actually present. The few atheromatous spots upon the aortic valves, could not have materially interfered with their free action.

In the above history of some of the more common forms of valvular and other diseases of the heart, I have purposely avoided entering into any details as to the treatment of these affections. I have in fact omitted, for the most part, every thing that does not influence in some degree the diagnosis, hoping in this way to render the subject less complex. By far the most important point that we have attempted to investigate, is the mode of distinguishing organic disease of the heart from mere functional disturbance. It is this that is chiefly valuable both in the prognosis and in the treatment.

ART. II. *On the Nature and Treatment of the Dropsical Affection following Scarlet Fever.* By JAMES STEWART, M. D.

THE dropsy following scarlet fever is at times a formidable affection, not unfrequently demanding more of the attention of the physician, than the disease which precedes it; for a fatal progress may imperceptibly be made, when danger is but little suspected, and even when from the extreme lightness of the primary disease a speedy recovery is expected. The remarkable slowness of what has been termed convalescence in this disease, but which from the occurrence of a number of obstinate symptoms, and their occasional fatal termination, might better entitle it to the name of a distinct stage, is familiar to every physician.

In some cases, the dropsical effusion appears suddenly at any period from the time of the disappearance of the eruption to the end of the third week. In the greatest number of instances, however, after the pathognomonic symptoms have disappeared, the swelling gradually shows itself, preceded and attended with lassitude, fretfulness, and slight febrile excitement. At night the little patient is extremely restless and feverish. These symptoms will continue for several days without any mitigation or change of any kind, and without the usual symptoms of local disease; but a general feeling of uneasiness appears to pervade the system. The face and lower extremities first give evidence of the existence of serious effusion in the cellular membrane, which is gradually filled in every part of the body. Effusion also occurs in the large cavities, and ascites and hydrothorax in severe cases accompany the other species of dropsy, and usually precede a fatal termination of the disease.

When anasarca is unattended with febrile excitement, there is but little danger to be apprehended, although the serous fluid may be extensively diffused: when however there exists much heat of skin, thirst, restlessness, and general uneasiness, it demands early and prompt attention, for these symptoms will not long continue without being followed by local inflammation, congestion, or effusion in important parts, often terminating fatally. If possible, these should be anticipated; for when once they are established, there is great difficulty in their removal, complicated as they are, with a general affection which embarrasses the action of the whole circulation. It rarely happens that this febrile action continues even for a short time, without tenderness of the abdomen, vomiting, interrupted respiration, or a dry cough following; and the patient either sinks under the accession of a violent inflammation, or from the effects of excessive effusion in some of the important cavities.

I have been led to these remarks in consequence of having had occasion to prescribe for several cases of dropsy which has followed scarlet fever prevailing in this city within a few months, where its nature, and the insidious and dangerous manner of its approach were manifested. In all that occurred, its nature was decidedly inflammatory, and were treated most successfully by early general bleeding and diuretics; bleeding however was the remedy on which reliance was principally placed, for a prompt removal of the disease. The following are the cases which I have attended within a few months, and are selected as types of the nature of the affection and its complications, as they have come under my notice within a few years past.

Case I. — This was a child aged about six years, to whom I was called after the eruption which characterizes the disease had disappeared; the primary affection was so trifling as to attract scarcely any notice, nor was there any medicine given, or any professional advice sought, until the face commenced swelling. I found the child with the pulse a little quicker than usual, a slight increase of the natural heat of the surface, and some degree of fretfulness; these, together with the tumefied condition of the face, and a slight swelling of the feet, and occasional nausea, constituted all the symptoms present; indeed the symptoms were so light as to excite no apprehension. The bowels were first opened with an enema, and effervescing draughts given to allay the irritability of the stomach. The bowels were kept free by an aperient mixture, and a combination of acetate of ammonia and spirits of nitre to act on the kidneys, was used during the subsequent attendance of a week. This course was followed with some mitigation of the heat, but with little increase in the urinary discharges, or abatement of the swelling. The child however appeared to be gradually improving; indeed, throughout this period there existed no symptom that could excite any apprehension as to an unfavourable result. About a quarter of an hour after I had made a visit one morning, at which I found her with scarcely any symptom requiring any particular attention, I was sent for in haste on her being attacked with a violent pain in the abdomen. I found her labouring under a severe attack of peritonitis, with the usual symptoms of extreme tenderness and pain on very slight pressure. She was immediately bled freely, a number of leeches were applied to the abdomen, followed by fomentations, and the most active treatment pursued to combat the inflammation, but without avail, for she died in forty-eight hours after the attack of peritoneal inflammation. Permission could not be obtained to examine the body.

Case II. — About the same time, I was called to visit a boy aged two years, for a swelling which appeared about the face and legs. The previous history of this case very closely resembled the one just related in its exhibiting so slight an eruption as to attract no solicitude on the part of the parents, consequently he had been subjected to no kind of treatment. I prescribed some opening medicine, and followed it with calomel and squills as recommended by Dr. Dewees. On the third day there was considerable cough with painful respiration; the diuretic had not been followed by any alleviation of the symptoms, or any increase in the quantity of urine. The child was now bled freely from the arm, and a warm poultice applied over the chest, with an immediate abatement of the symptoms of pulmonary affection. The same diuretic was continued, with the occasional use of spirits of nitre. The serous infiltration of the cellular tissue steadily increased for several days, and the urine was still discharged in its diminished quantity, although a farther change was made in the diuretic by the addition of tincture of digitalis in a dose proportionate to the age of the child. At the end of twelve days, finding the dropsical effusion still on the increase, I was induced to make an examination by pressure on the lumbar region, over the seat of the kidneys, to ascertain whether any tenderness existed in that part. On discovering some indications of pain on pressing there, I directed four leeches to be applied on each side of the spine immediately over the kidneys, and encouraged the flow of blood for the space of two hours, by the application of warm stupes. This course was almost immediately followed by a relief of all the symptoms, the urine flowing freely, and the tumefaction decreasing. The secretion of urine was promoted by the use of spirits of nitre and mucilaginous drinks, and in a few days the child had nothing to contend with but the debility attendant on convalescence, from which he soon recovered.

Case III.—This was a little boy about five years of age, where the dropsical affection was preceded by the same mildness of the primary disease. The swelling extended over the whole body, and the face particularly was of great size. After administering a cathartic of jalap and cream of tartar, he was put upon the use of acetate of ammonia. The cathartic was repeated daily for three days with no abatement of the symptoms, neither did the acetate of ammonia effect any increase in the urinary discharges. As the skin was hot, and pulse active and frequent, a free bleeding was resorted to. On visiting him in the morning, I learned that he had been attacked with violent vomiting during the night, which continued unabated the whole of the day, notwithstanding the application of a sinapism to the epigastrium, and the use of the effervescing mixture. The vomiting still continuing in the evening, I directed several leeches to be applied to the epigastrium, and the bleeding to be promoted in the usual manner for about three hours, when the child became quite languid; the vomiting however ceased entirely, the urinary secretion became abundant the following day, and the child rapidly recovered, using nothing more than the acetate of ammonia.

Case IV.—This was another instance of dropsical swelling, from effusion in the cellular membrane after a very slight eruption of scarlet fever. There was a hot skin and thirst, great restlessness at night, together with the fretfulness so common in children thus affected, and slight nausea: the face and limbs were but little swelled. Instructed by the other cases of this disease, the child was promptly bled, without having recourse to any other remedy, except an enema. A free flow of urine soon followed, and nothing more was prescribed but a gentle aperient.

Case V.—Was that of a boy, aged four years, to whom I was called after the disease, and continued for about a month. This child had been treated by the physician who had attended him with diuretics alone; the swelling, however, had steadily increased, and when I was requested to see him, he was enormously swelled, and suffered greatly from hydrothorax; the extreme prostration and the prospect of almost certain death, forbad the use of the lancet, or of any other method of bleeding. No alteration was made in the treatment, and he soon sunk under the accumulation of water in the cavities.

The immediate cause of dropsical effusions has been long the subject of inquiry, and varying opinions have at different times been advanced in relation to it, according to the existing medical doctrines. From the earliest ages it has received much attention from physicians, and, as might be supposed, very erroneous ideas were entertained as to its nature; and even at the present day, with the light thrown on it by anatomical investigations, it still remains in a great degree obscure. Pathological anatomy has, however, more clearly revealed the conditions of system attending it, and from numerous autopsical examinations, a more perfect knowledge has been acquired of the immediate cause of the effusion, and of those departures from the normal state in some important parts forming the link in the connected chain of causes. To investigations of this nature are we indebted for the accurate divisions of the causes of dropsical effusions, and for the fact that they may arise from different conditions of the system. Much attention has been of late bestowed on that species of dropsy following scarlet fever, which differs from ordinary dropsy in not being attended with symptoms indicating obstruction in the circulation, from different affections of the heart, or chronic enlargement of the liver, &c.

The dropsy occurring after scarlet fever is an affection arising from simple exhalation from increased action of the capillaries, co-existing with a diseased state of the kidneys. The presence of this inflammatory condition in the cellular and serous tissues, is evident from the cases above stated; for in each of them there appears to have been more or less of inflammatory action in connection with the anasarcous effusions. In the first mentioned case, severe and fatal peritonitis occurred; in the second there appeared the symptoms of pulmonary and renal inflammations, which were only relieved by prompt bleeding; in the third, obstinate vomiting ensued, which resisted the ordinary means used, but which readily yielded to the local abstraction of blood; in the fourth, there was no time for the developement of any inflammation; but that this was the condition of the system, would appear from the immediate breaking up of all the symptoms of dropsy upon bleeding; in the fourth, the child died loaded with serous effusion, and had never been bled. These are as unquestionable proofs of the existence of an inflammatory action, and are as conclusive to the establishment of the fact, as an anatomical evidence.

This excited state of the minute blood-vessels or capillaries, there is every reason for believing, exists throughout the whole system during the first or active stage of scarlet fever; the swollen state of the integuments so invariably present during the height of the eruption, the rheumatic affection of the joints, and the occasional existence of abscesses after the attack has subsided, would indicate the excited state of the capillaries beneath, as well as on, the surface of the body. The disease has been regarded solely as a cutaneous affection, and thus arranged by nosological writers; but this is probably a very limited view of it, for there is every reason for believing that much more of the body is affected than those parts which come under our immediate notice; we can trace it in the mouth and fauces, and the peculiar characteristic of the disease is evident as far as the eye can detect it; but it is certain that the affection does not cease there. Other organs and tissues besides the dermoid surface, mouth, tongue and fauces, are the seat of the affection, and exhibit symptoms which clearly show that they suffer from the greater violence of the disease, while other parts are comparatively free. Sometimes the brain receives the full force of the disease, when in some instances no eruption appears on the surface, but the child dies from cerebral congestion, without its appearance at all. At other times, especially in very young children, the air passages are the chief seat of the affection, in connection with the skin, as appears from the immense secretion of viscid mucus from those parts; while the same viscid secretion in the stomach and bowels occurs to such a degree as completely to line the mucous membrane of those parts, preventing the operation of ordinary doses of medicine, showing the force of the disease on those surfaces. Again, when contraction of tendons, abscess, or dropsical effusions follow an attack of scarlet fever, we may very reasonably suppose that these effects have followed an inflammatory action of those parts on which the disease has spent its force; for the skin, which is under our inspection, suffers from the effects of inflammation in the desquamation of the cuticle. Autopsical examination also shows the effects of the disease on particular parts; for the appearances in the same parts are by no means uniform in different cases. In some, effusion is found in the brain, with but little or no marks of disease in any other part. In others, the mucous membrane is extensively diseased with patches of ulceration, and exudation of lymph scattered over its surface; while again, but little remains of diseased action are found, although very severe symptoms may have preceded death. This is more particularly found to be the case where the air passages were the principal seat of the diseased action, manifested during life with the usual symptoms which attend an excited action in the bronchial mucous membrane, or where the brain has suffered from congestion. In a number of cases which have been submitted to post-mortem examination in the course of several years, although as a general rule the mucous membrane of the primæ viæ were the most diseased, yet as was just remarked, there was no uniformity in these appearances; for in some, a congestion of the principal organs was the only mark of disease revealed.

Different organs and tissues may therefore receive the full violence of the disease; and in those cases where serous effusions occur, there has doubtless occurred an excessive action in the cellular and serous membranes, connected also with an altered condition of the kidneys from the location of the disease during its eruptive stage in this part. It has been suggested that the dropsical affection may arise from the extensive sympathy of the capillary system, and when the cutaneous tissue is so violently affected, the kidneys participate, from defective action of the former; but abundant experience proves the reverse to be the case: and if from any cause the cutaneous transpiration is arrested, the kidneys secrete more abundantly. Another objection to this view is, that dropsical affections rarely follow a severe cutaneous eruption of scarlet fever; but, as in the cases above cited, most frequently, if not uniformly, occur after the mildest form of the disease. This fact also, is in opposition to the views advanced by Dr. Stark,* who considers the affection to arise from the vicarious action of the kidneys, upon the action of cold on the cutaneous surface; the general system being weakened from previous illness, and the vessels not having recovered their usual tone to resist this effect, the blood is thrown upon the internal organs, and the kidneys are the first to suffer. If this were uniformly the case, we would rarely find it after a mild form of the disease, where the strength is left almost altogether unimpaired; but the dropsy would be in proportion to the violence of the disease.

Having never had but two opportunities of making a post-mortem examination, of those who died from dropsy following scarlet fever, I am unable to state positively, what was the condition of the kidneys, but must refer to others for information on this subject. Among these is Dr. Hamilton of Edinburgh, who published an account of several cases of dropsy after scarlet fever.† In every case examined by dissection, the kidneys were found in a yellowish mottled condition, a state which points out the first stage of that organic change which Dr. Bright in his Medical Reports, published in 1827, states as invariably connected with dropsical effusions attended with albuminous urine. Dr. Mateer of Belfast,‡ published an account of a number of dissections of those who died of dropsy, and among them was one that had died of this form of the disease, now under consideration; in this case the kidneys alone were diseased, having the appearance of hepatized lungs, being soft and livid.

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* Edinburgh Med, and Surg. Journ. Nov. 1835.

† Edin. Med. and Surg. Jour. vol. 39, p. 154.

‡ Ibid. vol. 40, p. 73.

There can therefore scarcely exist a doubt, that in every case there is a diseased condition of the kidneys, for the urine is always found coagulable by heat; a fact which has also been pointed out by Drs. Hamilton and Stark, in the papers already cited.

It may therefore be presumed that the kidneys have suffered during the progress of the disease, and that the urinary depuration and cutaneous transpiration being arrested, effusions will ensue in the cellular membrane and serous cavities, unless the mucous surface of the bowels comes to the relief of the system by inordinate secretion, producing a spontaneous diarrhœa.

The success of the practice above mentioned, fully warrants the adoption of the views here advanced, as to its inflammatory character. Dr. Stark, in the paper already mentioned, states that he lost but one in fifteen cases that occurred in his practice, during the year of its prevalence in Edinburgh, and this one the parents strenuously refused to have bled. I know of no fatal case where bloodletting was used early in the attack. Blood should if possible be taken from the arm, and at the first appearance of the swelling the quantity need not be great; the most decided advantage is obtained from the impression thus made on the circulation. Next to general bleeding, is the application of leeches, which ought to be over the seat of the kidneys, and the flowing should be maintained for two or three hours after they have separated. These however, should never be relied on, where a vein can be opened; in severe cases this is almost indispensable, when the blood should be allowed to flow until the pulse gives evidence of the effects on the circulation. A solution of the acetate of ammonia, combined with spirits of nitre, and a small quantity of tartarized antimony will be found one of the most efficacious adjuncts to venesection, for the speedy removal of the disease, particularly if accompanied by the use of a warm bath.

ART. III. *Cases of Renal Disease occurring in early infancy, with remarks on the connection between it and some of the Cerebral affections of children.* By WM. C. ROBERTS, M. D.

Case I.—S. E. K., æt. one year and 11 months. At six months old, this child had severe convulsions, supposed to be dentitial, which subsided after very active treatment; but thenceforth she was almost constantly subject to attacks of fever, of laryngismus stridulus in a marked degree on the least excitement, as even the sudden closing of a door, of cringing of the body and limbs, and a flexed state of thumbs, fingers and toes. No convulsive attack, however, of any severity, occurred until the winter, in which one I did not see her, the ordinary remedies being used by the mother. On Sunday, 8th March, she was running about apparently well, until six in the evening, when she became feverish, and at 10 P. M. had a severe convulsion. Being freely cupped and otherwise treated, she remained free from convulsions though indisposed, with occasional slight laryngismus and spasms, until the Sunday following, when about the same hour she was again convulsed, and during the night at intervals of half an hour, continued to have the carpo-pedal spasms, and convulsive movements of the eyes and mouth. These then ceased, and did not recur until the day of her death, which occurred with wild convulsive movements in the arms, legs and mouth, and in the eyes, one or other of which she opened very wide, while the pupil dilated excessively; the other remained closed, the orbicularis palpebrarum oscillating by spasmodic contraction with excessive rapidity. At four P. M. on the 28th, she expired quietly. After the cupping, her appearance was remarked for its paleness; the external ear was as white as paper. I generally found her dozing, the skin and head cool, though occasionally a little feverish; easily aroused and very peevish, greedy to nurse and drink, the tongue furred and apthous, the stools unequal, but unhealthy; no urine passing sometimes for two or three nights and days together, and then one gush occurring freely and of a muddy hue. The pulse was frequent and feeble; occasionally she had excessive accumulations of mucus in the chest, so that a friend of much experience, who saw her one week before her death, observed that she seemed then to labour under nothing more than a slight bronchial affection.

Post-mortem Examination.—Little emaciation. The arachnoid of both surfaces were vascular, and its veins congested. Internally, the brain was healthy, and contained little or no water. The pericardium, much distended and containing at least two ounces of serum, occupied the whole of the left side of the chest, and had pushed the left lung far down into its posterior portion. The heart was large, weighing when separated from the great vessels, two ounces and one drachm. The lower lobe of the left lung was firm, increpitant, and of a homogeneous bluish colour, like the exterior of the spleen: its upper lobe healthy. The right lung congested but crepitant. The bronchial mucous membrane inflamed. The left ventricle of the heart was filled with dark watery blood. The intestines, liver and spleen were healthy. The *kidneys*, large and smooth; externally, of a pale red on their outer edges; which as it approached the concavity of the organs became of a flesh colour, most remarkable on their upper surfaces, (the grayish red, or reddish yellow of Christison, I suppose,) and presented throughout their whole extent, small roundish spots of a vivid red colour, some single and others collected in groups, contrasting strongly in colour with the pale surface in which they existed, distinctly visible by the naked eye, but much more so by the lens. The pale colour and the red specks equally existed throughout the internal cortical structure; (according to Rayer, congestion of the malpighian glands,) the striæ of the organ had disappeared, and no granularity was discoverable. Some of the tubuli were healthy, others encroached upon by the cortical substance, small, and as it were, distorted; their fan-like expansions rounded off, and one, in a kidney which I brought away, nearly obliterated. This kidney was seen by Dr. Swett, who fully coincided in opinion, as to its diseased appearance. Bladder very small.

The same condition of the right auricle of the heart, which I have described in the case of J. W. M. which follows, existed in this, viz. a separation of the fibres of the auricle from each other, with nothing intervening but a transparent film of pericardium.

I consider this to be an unequivocal instance of the disease which is called morbid degeneration of the kidney, and has been described by Bright, Rayer, Solon, Forget, Christison and others. It is rare to meet with it in so young a subject, though Solon indeed gives an instance of it in an infant 18 months old. The urinary secretion of the patient was materially diseased. Coincident with the first attack of convulsions at six months old, she had, after each discharge of urine, one also of a table-spoonful of matter like the white of an egg, a modification, probably, of vesical mucus. This circumstance recurred in a slight degree, from the effect of cold bathing in summer, and is very characteristic. She always made large quantities of water at a time, and more than is natural. During the attacks of fever and carpopedal spasms, with stridulous breathing, which so frequently occurred, urination never failed to bring them on, together with writhing and twisting of the body, and she frequently carried her hand, as if in pain, to the external genitals. During the last three weeks of her life, the urine was often wholly suppressed for a day or two together, and when passed, resembled exactly the water in which unpeeled potatoes had been washed. As it was always passed upon cloths, or mixed with the contents of the bowels, it could not be tested either as to coagulability or density. She was always thirsty, and a great drinker. She seldom perspired; she had always a tendency to drowsiness, seldom played about, but liked to be carried about, and to be held in the arms. Latterly, I almost always found her asleep, though she was easily aroused. She was always pale, and her complexion dingy. Latterly her hue was almost anæmious. These are the essential indications of the malady, and were strongly marked.

Next as to the secondary diseases which supervened. She laboured under very decided dropsy of the pericardium; a large, if not an enlarged heart, congestion of the lungs, bronchitis, and vascularity of the meninges of the brain. Of all the secondary lesions which are superadded to the morbid degeneration of the kidneys, dropsy is the most common, and particularly that variety of it called anasarca. This she had not, unless a swelling of the left foot, which I did not see, but of which I have been told, was of this character. But the dropsical effusion into the pericardium was very decided, and it is one of the commonest secondary appearances. Her extreme liability to bronchitis has already been mentioned, and the details of the autopsy show that pneumonia existed; which though common, is a less frequent complication. To coma she was disposed constantly, and the occurrence of convulsions, with which the attack commenced, and by which in a mild form her existence was terminated, and the very frequent, nay almost continual recurrence of those spasmodically flexed and rigid states of the fingers and thumbs, and of the toes, which has been called "carpo-pedal spasms," and of that peculiar sound of respiration, which has received the names of "child crowing" from Gooch, and "laryngismus stridulus" from Ley, show that the most formidable of the secondary affections, that of the brain, was not wanting in a high degree. I may just advert here to an observation of Dr. Christison's: "In this city," (Edinburgh,) says he, "the generality of cases of death by coma, present no marked morbid appearance of any kind within the head," and in a note he adds, "in this respect, my experience, as well as that of others, is at variance with a statement of Dr. Osborne, that, 'in almost all his fatal cases, life terminates by a low form of arachnitis, as is evinced by examination after death.'" So far as one case goes, the present is in support of Dr. Osborne's view.

I have not employed the common term of "Granular" degeneration, in the relation of this case, because the kidney presented no such character; and because granularity is not an essential feature of the morbid changes which the organ may undergo. "Occasionally," says Dr. Christison, "neither by tearing, nor with the aid of a magnifier of four or five powers, is the granular character to be distinctly seen, or any other than a smooth homogeneous character like that of the brain."

It may be worthy of consideration, whether some of the cases of convulsions, which so frequently recur in children during the period of dentition, as well as subsequently, and by some are ascribed to the teeth, by others to worms, by others to disorder of the bowels and stomach, and by others to a strumous disease within the brain, may not depend primarily for their cause upon renal disease. In those which resist long and obstinately the best directed efforts for their cure, the attention of the practitioner ought certainly to be directed to the investigation of this point of the diagnosis. "Some of the affections now referred to," says Christison, "are on the whole, rare; others occur so frequently in connection with granular disease in the kidneys, that I now seldom meet with them, and never under the character of inveteracy, without directing my attention to the urinary secretion. And it is surprising, how many cases otherwise obscure in their nature, are thus made at once intelligible by being discovered to be secondary to the disorder in question."* The case which occurred to my friend, Dr. J. B. Kissam, related in the last number of this Journal, sufficiently proves the truth of these observations, in reference to the adult. I shall be glad if this case and that which I shall presently relate, should do so equally in regard to the child.

Some light appears to me to be also thrown upon the nature of that obscure affection, known by the appellation of laryngismus stridulus, under which this child laboured, accompanied by the contraction of the toes and fingers, to which the name of carpo-pedal has been given. Dr. Ley, in his elaborate work has ingeniously maintained the theory that it depends upon enlargement of the cervical and bronchial glands, compressing and impeding the functions of the nerves of the larynx. This explanation has not been satisfactory to the profession, and in this case, neither glands were found upon examination to be affected. Nor will that of Dr. James Johnson, that it depends upon irritation of the gastro-intestinal glands, be more so, when we consider the healthy state of the mucous membrane of the intestines, and the co-existing diseases in which it might have originated. No one that I know of, has yet asserted that it depended on a diseased condition of the heart or lungs; although I observe that in one case related by Dr. Ley, which proved fatal in three months, the lungs were almost apoplectic from congestion, the heart hypertrophied, and the left ventricle enlarged. Dr. Clark also, in his admirable chapter on "a peculiar species of convulsion in infant children," in his "Commentaries on some of the most important Diseases of Children," where he has excellently described the disease, states that in one case, "the pericardium was full of pus." He supposes that in this case the returning blood from the head and lungs found great difficulty in passing through the heart, whence originated pressure upon the brain. How far the effusion into the pericardium in this case, and the frequent congestions of the lungs which occurred, had any effect in the inducing the "crowing," I must leave to others to determine. Numerous writers, among whom are Gooch, Alexander Monro, Burns, Cox, Marsh, and Marshall Hall, attribute it to an affection of the brain. Gooch, (Lect. on Midwifery,) remarks that it is "more probably an affection of the brain; and the appearances on dissection show that vascular congestion has existed, which has ended in effusion into the ventricles." The observations of Monro, in his Morbid Anatomy of the Brain, go to confirm the opinion of Dr. Clark, who says, "that a long and very attentive consideration of this species of convulsion, has led him to conclude, that the brain, in every case of convulsions, is at the time organically affected, either directly, or *indirectly;*" indirectly, when they take place in the progress of other diseases, among which he enumerates pneumonia, pericarditis, infantile fever and marasmus, and why not renal degeneration also? Marsh, (Dublin Hosp. Reports, V.) says, that "if convulsions afterwards occur, it is owing to the brain becoming affected." Cox, (Med. Repos. Feb. 1825,) calls it "cerebral croup." Burns, (Midwifery,) considers it to be "a direct affection of the eighth pair of nerves, and *sometimes* of the base of the brain also." Hall treats it as a cerebral affection. With these authors I am disposed to agree. The excellent paper of Dr. Addison on "Cerebral Affections connected with Renal Disease," is intended to point out the symptoms by which, in the absence of other indications, renal disease may be detected by the character of the cerebral disease alone, and some of his descriptions of that malady have many features in common with those which it presented in my patient. If it should hereafter appear, that the cerebral affections of children as of adults, do depend sometimes upon, and are secondary to, renal disease, and if laryngismus stridulus be indeed a cerebral affection, its occurrence in combination with other evidences, may lead to the suspicion and detection of this malady. At all events the possibility of such an occurrence merits consideration, and I trust that the condition of the kidneys and urine in young children labouring under head affections, not less than of the brain, lungs, heart, and cervical glands, will receive more attentive examination, and in this disease in particular, which may be one of the many consequences of cerebro-renal irritation. A wide and deeply interesting field of investigation is here opened, which I hope will be diligently cultivated. Dr. Clark, who knew nothing of the morbid degeneration of the kidney in question, states that there existed in one case a "remarkable" symptom, which was readily explained by the investigation after death. "There had been, *for a long time*, a very copious secretion of urine, much exceeding the quantity usual in children." This he explains by the pressure of a mass of enlarged mesenteric glands directly below the origin of the emulgent arteries, which by impeding the farther passage of blood downwards, enlarged these arteries, and caused a greater flow of blood to the kidneys, and caused them to secrete more abundantly. This is a lame conjecture; in such a case anasarca, though such is not said to be the fact, probably existed, as he speaks just before of indirect pressure on the brain occurring from "any cause which has a tendency to prevent a free circulation through the extremities," (the very origin of anasarca,) and perhaps the whole case might have been owing to a diseased condition of the kidneys themselves.

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* On the Gran. Degen. of the Kidneys, by R. Christison, M. D. F. R. S. .&c.—Edin. 1838.

These remarks on the occurrence of renal disease in children, which I offer with much deference, may perhaps be strengthened by the narration of the following case.

Case II.—Ascites; suppression of urine; morbid condition of liver and kidneys, in a child 19 *months old.*

J. W. Moore, æt. 19 months, a tall and forward infant. About one month before I saw him, he had got extremely wet for two days in succession, and caught a heavy cold. He never was himself again, but lost his usual vivacity. In a fortnight after a second exposure on a damp March day, his face began to swell so much as to attract the observation of all who saw him; it was puffy, and the child began to be sallow and pale. His skin had always been white, but not unhealthily so. The swelling of the belly was noticed five days before I saw him. Neither of his parents ever remember to have seen him sweat. There appears to have been nothing wrong about his urinary secretion previously. During the last month he made less water, of dark colour like strong tea. He had been treated for worms, of which he had passed two lumbrici and several ascarides. He became seriously ill on Tuesday evening, Feb. 25th, and I saw him next morning at 10 A. M. His cheeks were rather flushed; the skin was hot and dry, (which latter character it never lost); the pulse tense and frequent; a slight cough, and the breathing so high and rapid as to simulate pneumonia. The tongue was heavily furred, but broad, and neither red or pointed; the gums were apthous but not inflamed. The belly was large, dull upon percussion, and gave an obscure sense of fluctuation to the touch. He had no particular thirst, *and had made no water all day*, nor since the preceding night at 8 P. M. The feet and legs were decidedly swollen, but not anasarcous, and faintly erythematous, and the face puffy. Looking upon it as a case of inflammatory ascites, I bled him till the system felt the loss slightly, and administered calomel with the pulv. purg. At 6 P. M. no stool, *and has made a slight quantity of water once;* enemata were of no service. At 9 A. M. of the 28th, no stool; and no urine had passed since the afternoon of 27th. He had passed a restless night constantly turning upon his belly, endeavouring to get out of the bed, screaming out loudly, writhing, twisting, and apparently delirious at times. He looked paler, his pulse was weaker, and the skin still hot and dry; a warm bath the preceding evening had been followed by no moisture. At 5 P. M. he was sinking; the breathing laborious; child *very pale*, and pulse a mere thread. No evacuation of the bowels, and once only a moderate quantity of urine discharged with pain. At 8, pulse imperceptible, flighty at times, screams out, and when his position is changed, quickly gets back to his former one upon the belly, with the face buried in the pillow. At half-past 8, 46 hours from my first visit, just after drinking some brandy and water, he opened his eyes convulsively very wide, the pupils dilated to their full extent, and he expired instantly.

Post-mortem examination of the *head* refused. *Lungs* collapsed but healthy. Heart large but sound. The right auricle had a flabby look, and contained air. The muscular fibres were attenuated and separated in bundles from each other, nothing being interposed between them but the thinnest and most transparent film of pericardial reflexion. The belly contained at least a pint and a half of straw coloured serum; the peritoneal surfaces being perfectly healthy. There were a few vascular patches in the *intestines*, and a few of Peyer's glands were in a state of hypertrophy and reddened. The mucous membrance every where firm. They contained little fæces and a good deal of mucus and two lumbrici; the mucous membrane in their vicinity not being vascular. Stomach slightly congested and dotted with red points. The apex of the convex surface of the *liver* (which was large,) had a livid red look, which grew much fainter towards the edges, and on it were several large nearly white spots; on cutting into them the change of colour passed down into the substance of the organ, which was of a pale or yellowish brown hue. It was rather soft, and bled freely when incised, but only in its darker portions. The *spleen* was very much softened. The gall-bladder large and full. The *bladder* empty and very contracted. The *kidneys* were large and very firm; externally of an uniform pale purple brown colour, and internally of the same pale yellowish brown colour as the liver, and not granulated.

I look upon this condition of the liver and kidneys as the commencement of anemia; and although it is by no means so unequivocal a case of renal disease as the first which I have related, yet when we consider that the child had previously presented none of the usual signs of hepatic disease, and the frequency of organic lesions of nutrition of the liver, without the production of mischief in the economy; when we consider the pallor and puffiness of face, the existence and apparently rapid formation of the ascites, originating in exposure to cold and moisture; the suddenness of dissolution, the almost total suppression of urine for two days, and the delirium which accompanied it, it seems but just to record it under this head.

In this case there was a decided swelling of the feet and legs, not pitting on pressure. On this subject Christison makes the following observations, which materially strengthen my position. "According to my observation, all cases of anasarca when the œdematous parts do not pit on pressure, are connected with (granular) disorder of the kidneys. Such cases are commonly of the nature of acute or inflammatory dropsy. In every case that has come under my notice since 1828, the effusion was clearly connected with diseased kidney." (p. 40, Dunglison's ed.)

I shall close these observations by stating that on the 17th of September 1837, I was consulted by a widow woman aged 47, who had laboured for seven months under excessive ascites and anasarca. The abdomen measured three feet six inches in circumference; the legs 15 inches. The thighs, loins, nates, skin of the belly and throat, arms and face were all infiltrated. She could scarcely sit, bend, or lie. The urine was scanty, of a dark olive colour, coagulating strongly by nitric acid and by heat, beginning in cloudiness at the edges of the spoon, then shooting out into flakes tending to general whiteness. No other disease was discoverable. Many things were tried with little advantage, and she gradually recovered while using an empyrical syrup producing no perceptible effect, and is now in perfect health. I saw her a few days since, as active and slim as ever. This looks very like a spontaneous recovery from advanced granular disease, and as such must be looked upon as very rare.

Art. IV. *A Short History of the late Endemic Diarrhœa which occurred at the Long-Island Farms, with Remarks. By* Nicholas Morell, Assistant Physician.

An Endemic occurred at the Long-Island Farms in the winter of 1840, which possessed some peculiarities.

This institution, which was organized especially for the inhabitance and cultivation of destitute children by the Corporation of the City of New-York, is situated about two miles from the city, on the east bank of the East River, or Long-Island Sound. It comprises four large buildings, separate one hundred yards from each other; play-grounds, a large farm and farmhouse, all together capable of accommodating from five to eight hundred children. Here the above number for seven years had found an asylum without experiencing from epidemic influences a greater loss than is the common average among the poor.

About the middle of December, 1839, evidences of a constitutional change in many of the children were apparent. They had not lost much of their embonpoint, but were extremely dull and inactive, their eyes lacked lustre, their skins exhaled an offensive odour, and when any were taken ill, medicine no longer had its accustomed effect. Shortly afterwards, a great number were taken with a slight cholera morbus, which contributed to render their health still more precarious; and yet later, an incurable diarrhœa, followed by mortification, made its appearance. The diarrhœa would attack, produce most insupportably offensive evacuations mixed with much food that appeared unchanged, causing very little pain but the most extreme debility, and terminating in from three to eight days in mortification. This commenced somewhere near the junction of the mucous membrane and skin about the vagina, or anus, or inside the cheek, with a dark spot which spread rapidly to involve the parts affected in one mass of rottenness and putridity. Both extremities of the alimentary canal were not attacked at the same time, but its progress having been arrested at the vulva, the mortification commenced afterwards in the mouth.

Diarrhœa always attended these cases to their close, although in many cases without mortification, but not commonly without the loss of one or both eyes previous to death. In the progress of the case, a pearl-white speck made its appearance on the cornea, commonly on the under side at its junction with the sclerotica, spread over half the pupil, penetrated and left the iris protruding. All the children were more or less under endemic influence; a child was bled for pleurisy, in three days it mortified; two others were bled who laboured under febrile excitement, and mortification set in soon after; the ophthalmia could not be treated in the ordinary manner without certain loss of the eyes from rapid ulceration of the cornea. During the prevalence of the endemic we had occasional cases of scarlet fever, all of which followed the same course, and terminated fatally.

In the treatment of this diarrhœa, medicine was of little use. Castor oil had no effect, calomel hastened the mortification, ipecacuanha, commonly the most powerful remedy for such affections in children, increased the malady. Rhubarb was of little service, opium, wine, and astringents were worse than useless. Combinations of Columbo, gentian, and orange-peel, with Peruvian bark, did some good; bark in substance was also of service, but none of these, and many others which were tried, produced their accustomed results.

Post-mortem examinations showed the mucous membrane of the alimentary canal slightly reddened, the redness increasing from the duodenum toward the coecum, and from the great flexura of the colon toward the rectum; but it was not thickened or ulcerated. The mortification about the anus extended from two to three inches up the rectum, not always, however, involving all the coats, but frequently only the mucous membrane of the gut, and passing from the anus along the skin to the organs of generation in the male; but in the female the point of commencement was invariably the labia pudendi. Attacking the face, it frequently affected more than half the soft parts in this region. The brain and thorax showed no other than incidental traces of disease in the solids, but the blood remained fluid and not coagulated long after death.

There is a striking resemblance in result between this disease and that already known and described as malignant ulceration of the mouth, and the above endemic was probably only a higher grade of the same affection.

The ordinary food for the children, as heretofore supplied, was substantial, but coarse and slightly indigestible, consisting of bread made of wheat flour of a tolerable quality, beef and pork, with such vegetables and milk as the farm could furnish. Soup every alternate day, made with a due portion of vegetable material, and the meat of which the soup was made for the days intervening, with bread, &c., formed the ordinary diet; to which was added occasionally fish, and milk night and morning for the smaller children when this article abounded; but during the winter milk was supplied in comparatively small quantities. In cold weather the children were much confined. Accustomed to retire early to bed, and to pass their evacuations in the rooms, on account of the buildings not being properly arranged, they breathed an air almost insupportably offensive during the night. Besides being occupied an hour and a quarter every morning in dressing and cleaning, and three days in the week another hour and a quarter in being combed, and six hours a day in school, they were often confined for days together in the rooms, with little opportunity to breathe a pure atmosphere or take wholesome exercise.

Thus in the course of this history we have seen some remarkable phenomena. We have seen the children living on a diet uniform and somewhat indigestible, breathing an atmosphere extremely impure, and taking but little exercise in winter. We have seen the cornea destroyed by a mortification peculiar to itself; we have seen an almost incurable diarrhœa followed by mortification of the extremities of the alimentary canal; we have seen that post-mortem examination presented no traces in the solids to account for these phenomena, unless the fluidity of the blood long after death and the traces of redness on the mucous membrane, caused by the blood still oozing, are evidences of a condition during life which modified the action of disease and rendered it fatal.

If we compare the condition of the children above described with that of persons on ship-board, we shall find it in many respects similar. On ship-board the blood first becomes incapable of separating into its constituent elements, and then follows, if disease prevail at the same moment, mortification from slight wounds, diarrhœa, &c., states similar to those above described; and from this similarity we may infer, that the constitutional state in the above endemic was scorbutic at the moment when the disease appeared. The phenomena of the scorbutic state as it occurs in penitentiaries and alms-houses differ, however, somewhat from those noticed on ship-board. The gums are not commonly the first parts of the system which evidence traces of derangement in the blood, but the observer commonly first becomes apprized of it by noticing the singular operation of medicine. If he gives a purgative for a local inflammation, he will have to follow it by medicines to restrain the diarrhœa which the purgative excited; if he gives a dose of calomel, it produces immediate sallivation, followed by diarrhœa and frequently mortification or diffuse inflammation, if there be at the moment an irritable surface.

After this follow phenomena which appear to depend on the scorbutic state itself existing in an aggravated form. The surfaces of old ulcers begin to mortify, the legs of healthy individuals become at first slightly swollen, and then hardened, and finally covered with purple spots, the gums begin to ulcerate in some cases, the teeth are loose, and the general strength becomes greatly diminished. Under this constitutional state, if disease prevail, it will be uniformly fatal. But it will not always prevail, as is proved by the fact that the Farms have been superintended by the same medical officer for more than seven years, and that he has known the children to pass winters without being so well fed, or clothed, or warmed, as they were during the past winter, and not less crowded, without suffering greatly from their situation. He has known the prison fever to prevail in the Penitentiary, at a time when they were as well fed and clothed as at the present moment, and when they were less scorbutic. But there is no prison fever now, although the scorbutic condition is clearly of a higher grade, and was, during the past year, of a grade still higher. From these facts it is clear, that the scorbutic state, even with the aid of bad air, uniform diet, &c., is incapable of exciting disease, unless it be of a high grade. We know this to be the fact in regard to measles, scarlet fever, and smallpox; we know that they become epidemic without any connection with the scorbutic state, and so may dysentery or peripneumony; but if, while these affections are epidemic or endemic, they find a number of persons in a scorbutic condition, they will certainly attack them, and the disease will be so modified by this condition, as to be with difficulty distinguished.

Every disease, even the simplest form of inflammation, consists of several states, the one preceding the other, in uniform relation, if the subject be healthy as a whole. But to explain clearly, smallpox admits of the best application. You inoculate for smallpox: there follows first, more or less fever, then an eruption every point of which is circumscribed; then the maturation of that eruption, and afterwards, more or less inflammatory action in the mucous membranes; and lastly, the process of healing. Now, unless the first phenomenon, the eruptive fever, had existed, the rest could not have followed, and vice versa, if the eruptive fever does exist, the other phenomena must follow, or the subject must perish. When smallpox then commences with its first state in a subject whose blood is incapable of separating into its constituent elements, this state will pass; but when the eruption appears on the skin, it will not become circumscribed; and here the series is interrupted, the face swells enormously, the skin becomes purple, and the being ceases. So when the simplest form of inflammation commences in a subject whose blood is thus incapable of separating into its constituent elements, it cannot pass through its different series. The state of erethism or preparatory state may pass, but the state of tumefaction followed by more or less induration, or the state of resolution cannot pass, because there may be no lymph to coagulate; or if there be, it may be incapable of coagulation; or if it coagulate, it may be incapable of organization; and resolution is equally impossible, because there is too little contractility in the solids: hence mortification externally, or "serous hœmorrhage" internally, must inevitably follow.

You find the blood coagulated in the arteries of a mortified limb, which is blood and not lymph separated and coagulated, which is blood coagulated in the artery as blood coagulates out of the body, and this coagulum you find incapable of becoming organized. But the coagulum of an artery in a subject whose blood is good conditioned, you find to be composed almost exclusively of lymph, speckled here and there with the traces of blood-vessels in the state of new formation. Thus on the muscles of a stump in the case of a patient dead two or days after an operation, but whose blood was good, you find a thick layer of lymph, in the same manner slightly speckled with the traces of red vessels coming into being; but over a mortified stump, you find again the coagulum as blood coagulates out of the body, and without traces of new formation. Viewing even the simplest form of inflammation as a series and not as a simple state; not as a unit for which we have but one remedy; and considering that each successive state is the necessary consequence of the state which immediately precedes unless resolution takes place, and even if it do, that none of the states which may follow, can follow without the first, — we find that the solids are not the only parts of the system, which require our most earnest attention, but that the fluids come also in their turn to be of quite as much importance, and frequently the cause of incurability in most of those cases which leave few if any traces in the solids. We have seen inflammation passing its different states in a healthy individual; we have seen that it has a state of erethism or preparatory state, in a part, commonly attended with a slight chill; we know that this state is excited in the solids, and that it is necessary to the second state, or state of lymph coagulating and passing into new formation: we believe that this state is greatly connected with the blood which supplies that lymph, and that here the course of inflammation is most frequently arrested when it produces death: finally, we have seen the state of new formation, which cannot happen without the state immediately preceding; or, in other words, the parts may be swollen by the effusion of serum, or may mortify, but new formation cannot happen unless lymph first coagulates, and lymph cannot coagulate in a part unless the state of erethism precede.

Returning, then, to the most remarkable facts in our history:—the necessity of an absolute change in treatment, even for the common purulent opthalmia, and the singular destruction of the cornea in those who had the diarrhœa, we learn that specific treatment is out of the question, even for the simplest form of inflammation. During the endemic we observed the following: that after the first state of inflammation had been excited in the alimentary canal, it could neither be resolved nor maintained through its course; for resolution, there was too little contractility in the solids, because they had not been nourished for some time with a blood sufficiently electric, and for maintaining its course, the lymph could not coagulate; hence the serous hæmorrhage, hence the mortification.

In alms-houses the confined air which is extremely inelectric, the uniform diet, and uniform inactivity in which the inmates exist, produces at all times a lymph which approximates incoagulability, and renders all inflammation extremely difficult to treat with success. We have seen cases of mortification yearly among the children as consequences of various inflammations; we have seen the measles prevail as an epidemic, in which the treatment became difficult in the extreme during the stage immediately consequent to the eruptive fever. Here the eruption would rarely appear, or if it did, would have no points circumscribed, on account of the incapability of the blood to separate into its constituent elements, but producing swelling of the face; it would then turn upon the alimentary canal and produce death in little more than two days. But post-mortem examination showed no lesion sufficient to account for the termination of being, except the blood still fluid, black, and oozing from many parts of the membrane, a condition diametrically opposite to that which inflammation leaves when passing regularly through its different stages. Here we find thickening, here we find proofs of lymph coagulating: in other cases when the blood is incoagulable, leaving the skin prematurely, we find measles terminating life by serous hæmorrhage in the lungs, which will be increased by bloodletting and antiphlogistics, and can only be prevented by tonics and nutritious diet from the moment of attack. But if the case be left or treated with antiphlogistics in the beginning, and it is attempted to relieve the lungs by purging and diuretics, the disease turns upon the bowels, and death is equally certain.

In rheumatism, the lymph is commonly greatly coagulable; but there is a scorbutic rheumatism. Persons whose gums are bleeding with the slightest touch, often complain of severe pains in the different articulations, which frequently cannot be moved without the most excruciating pain. If you bleed these persons, you will find no coating of lymph on the blood, and they will grow worse; they can only be treated with raw cabbage and other antiscorbutics, with bark and vegetable acids. The writer has seen many such cases entirely recover with vinegar and raw cabbage, and many others where the incoagulable blood was not manifested by any other sign than that of rheumatism. Inflammation of the lungs when it occurs in such subjects, does not leave hepatization, but a state of injection of blood and serum in the pulmonary substance, occupying always one or more entire lobes, which cannot be cured by antiphlogistic treatment; this treatment even producing a state in some cases strongly verging toward land scurvy. Fevers, when they attack such individuals, will not yield to bleeding, calomel, or antimonial powder, but require frequently the stimulative treatment *ab initio.* The itch even, is capable of turning upon the alimentary canal, and cannot then be cured with sulphur before the blood has been rendered coagulable and the diarrhœa been arrested, when it will return to the skin in the form of a small pustular eruption, covering often the whole body, and become curable by sulphuric acid baths. Scarlet fever, too, will very frequently be malignant in alms-houses for the reasons stated above, and cannot be treated without the most powerful tonics and nutritious diet from the beginning. But scarlet fever, as the writer believes, produces incoagulability of the blood in many cases during the eruptive stage, which is followed by diffuse inflammation of the throat in scrofulous persons. These cases ought to lose a little blood during the eruptive fever, and be treated immediately after with tonics. To this he would add, that scarlet fever, in his opinion, often turns on the alimentary canal during the stage of eruptive fever, and produces death without leaving the least suspicion of the real cause. We have seen that before and during the mortality of the past endemic, there appeared occasionally cases of scarlet fever, and there is room for suspicion that the malignant diarrhœa followed by mortification was scarlet fever turned upon the mucous membrane of the alimentary canal. Be this as it may, during the prevalence of an endemic like the above, where the causes of derangement of the blood are evidently in operation, as bad air, uniform diet, and little exercise, and when the blood in all probability is deranged at a time when disease is also prevalent, the treatment to be pursued is apparent. The prevalence of disease from without you cannot control, nor can you immediately get rid of the bad air, nor produce immediate coagulability of the lymph, and therefore diet becomes your chief resource, combined with such tonics as will act kindly. Obtain as much free air as possible, change frequently, and greatly improve the diet; and if you cannot avoid the prevalence of disease by these means, you render it curable, you render the lymph coagulable, you nourish with this the enfeebled organs, you afford to the principle of life materials by which it can operate with less difficulty, and render disease curable by bringing the constitution to a state favourable for the course of its different series.

Art. V.—*A new mode of ascertaining the dimensions, form, and condition of Internal Organs by Percussion. By* G. P. Cammann, M. D., *and* A. Clark, M. D.*

Many of the laws of inanimate nature, modified in some cases by vital action, have important applications to the human frame; and it would be a task no less pleasing than instructive, to review the history of medicine in its connection with the natural sciences, and to show how much of its present advancement it owes to the philosopher. But it is not now our intention to explore so wide a field; we propose rather to confine ourselves to an inquiry regarding the applicability of some of the laws of sound to the more satisfactory diagnosis of certain forms of disease.

Percussion, as taught by Avenbrugger 80 years ago, and as practised at the present day, addresses itself mainly to two classes of physical laws, viz., those which govern the *degree of sonorousness* in different bodies; and, (though of less frequent and less important application, still deserving to be enumerated,) those which control the *different tones* of sound. To these facts, then, sonorousness and tone, we shall first direct our attention, and hope to show that by a new method of study, they are capable not only of rendering the knowledge we at present derive from them more distinct and certain, but that of themselves, or by the aid of laws to be hereafter enumerated, they will enable us to establish distinctions in the forms and nature of disease, hitherto not attempted, or attempted with but partial success.

Air is a good conductor of sound, but by no means the best with which we are acquainted. A vibratory wave communicated to it from most sounding bodies, undergoes divisions and subdivisions infinitesimal, and is propagated in all radial directions nearly equally, so that the ear at a moderate distance will receive but an extremely small portion of the vibrations. Thus, of the sound elicited by ordinary percussion on the human body, a thousand parts perhaps, are diffused and lost for one apprehended by the listener. But could we receive the sonorous pulses on one end of an elastic, homogeneous solid, little would be lost by radiation, and most would become audible at the other extremity. And although we may, in this way, catch and conduct the vibrations from a small surface only of the sounding body, say no larger than the orifice of the ear, yet experiment shows that we gain much in clearness and intensity. Place one extremity of a cylinder of wood cut in the direction of its fibres, evenly on the body, over the region of the liver, or on the anterior surface of the tibia, and apply the ear to the other. Now, let a person percuss in the usual way on the same region, or along the bone, within one or two inches of the point on which the cylinder rests; the sound communicated to the ear is intense, and even painful, very far exceeding in energy the same vibrations entrusted to the free air. Let the observer compare the bone and the liver, when their constituent particles are thus thrown into sounding vibrations, he will find, what from ordinary percussion he would have little reason to expect, that they greatly differ, both in degree of resonance and in tone. The latter exceeds in sonorousness, the former sounds on a higher note. Corresponding differences will be found to exist if fluid confined in the chest or abdomen, be compared with one or other of these parts; and in general, it may be assumed, that whenever the media compared differ in mechanical and chemical structure, there will be differences in these two respects; differences most easily recognised by comparison, yet in many cases, susceptible of separate recognition.

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* We wish here to express our obligations to Dr. C. L. Mitchell of this city, for the important aid rendered us in collecting the materials for the following Essay.

But associated with these, are differences in other qualities and accidents of sound, equally, or even more marked. The observer, suppose, practises first over the heart, listening and percussing on the same region. With each blow of percussion, the ear receives a sudden, clear, intense sound of high tone, attended with a degree of impulse even painful, appearing to be immediately under the instrument, or produced within it; of short duration, and ending with some degree of abruptness. Now, find the longest diameter of the heart in contact with the walls of the chest, it may be three inches, listen at one extremity and percuss at the other. The sound is the same in character, and it has lost little of its energy. Percuss at the point where the lung begins to overlay the heart; the sound is instantly modified and mixed, yet its cardiac type is still preserved. Recede still farther with percussion, moving by short steps toward the body of the lung; at a certain point the sound suddenly changes. It loses its intensity and high tone, is no longer impulsive, but is grave and distant, much more distinctly heard by the open ear, than by that applied to the instrument. Again, let the observer in like manner explore the hepatic region. Within short distances, the sound is sudden, clear, intense, and immediately under the instrument as before; yet it is less intense, less acute, and more prolonged; it is even semi-reverberant. As he increases the distance between the points of auscultation and percussion, the sound diminishes more rapidly than over the heart, though it is not entirely lost till percussion passes off from the organ, on to another medium. By this mode of exploration, the heart and liver become distinguishable through a class of signs, which, judging even from the analogous consistency of these organs, would not be supposed to exist. Still the differences we have described depend on fixed laws, and must be constant.

In the developement of these laws, we must first assume what philosophers have, perhaps, nowhere distinctly stated, but seem to have been regarded as an obvious and admitted fact, viz., that every form of matter capable of sonorous vibrations has its fundamental note; so that shape, relations, and percussion being given, the note, degree, and intensity of sound are unchangeable; thus, "the most short and sudden noise has its peculiar character."* This being granted, and surely it cannot be denied, we next proceed to ascertain the laws in obedience to which sounds vary in different media.

"The vibrations of all bodies, if of a proper degree of frequency, and of sufficient force to be communicated through the air, or any other intermedium to our organs of hearing, produce sounds whose *pitch* depends on their *frequency;* and their *force* and quality, on the extent or other mechanical circumstances of the vibrations, and the nature of the vibrating body."† But "a solid body may vibrate, either in consequence of its *inherent elasticity*, or in consequence of external tension." Now, "by *elasticity is meant what is commonly called hardness*, in con-

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[*] Peirce's Treatise on Sound, Art. 48.

[†] Idem, Art. 117 and 118.

tradistinction to toughness, a violent resistance to the displacement of the molecules of a body *inter se*, in all directions."* It follows, then, that tone or pitch must vary with the hardness or elasticity in bodies. (It varies, indeed, with other circumstances, as shape, weight, tension, &c., but with these we have little to do.) Again, *sonorousness* depends on this same quality of hardness or resistance. "Some bodies wanting [musical] elasticity, give back no repetition of sound; the noise is at once begotten and dies; while other bodies more elastic give back the sound and repeat it several times successively."† Thus we find the variations in the three leading qualities of sound accounted for: and hence infer a proposition which will occupy much space in our present inquiry, viz.: *that the tone, intensity, and duration of sound vary with the mechanical and chemical nature of the sounding body.* Now, in view of this law, an examination of the structure of the heart on the one hand, and of the liver on the other, would justify, if not require the inference that they would, under percussion, furnish sounds differing in these three cardinal respects; but the present state of science would not enable us, prior to experiment, to declare precisely what these differences should be. To ascertain this is the province of observation, and the results of such observation have, however imperfectly, been already disclosed.

Having now referred to such of the circumstances modifying the nature and properties of sound in its production, as interest our present purpose; it concerns us next to examine the laws by which sound is conducted from point to point, whether in the medium in which it is produced, or in one to which it may be communicated by contact. In our mode of exploration, the sound produced in a given part is often to be conducted by that part, through a greater or less space, before it can be taken up by the stethoscope, and communicated to the ear; and if it can be shown that the conducting power varies in different media with easily appreciable changes of substance, we have a rule of obvious value; for wherever we find, in the organs and products of the human body, variations in conductibility, we may safely infer differences of structure. We appeal again to philosophy;

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* Peirce's Treatise on Sound, Art. 33. † Encyclopedia, Art. Acoustics.

and first of sound as an unit. '*Elasticity* in a medium is the indispensable condition of its power to conduct sound.'* Again, 'important conditions in the constitution of media for the propagation of sound, are *homogeneity of substance*, and *uniformity of structure*.'† Second, of the repetition of vibrations, as a quality of sound. 'By travelling through an extent of water, the *duration of sound* is shortened, and its *musical character* diminished; while, in air, the contrary takes place; as when a bell is struck, the impulse of the hammer is heard only in the immediate neighbourhood, and the continued sound is the only one that affects the hearing at a distance.'‡ And lastly, "intensity of sound, i. e., the impression it is capable of producing on the organs of hearing, varies extremely with a variation in the *density* of the transmitting medium." It follows, then, that *the conducting power of media, both in regard to sound as a whole, and in regard to two, at least, of its constituent properties separately, varies* with elasticity, homogeneity of substance, uniformity of structure, and density in these media; or in other words, *with the mechanical and chemical nature of bodies.* Hence, to return again to our illustration in application of this principle; as we find the heart somewhat more dense and more homogeneous than the liver, we find it also a better conductor of sound.

All the facts thus far enumerated, however necessary and constant, will be found to require in their application, attention, comparison, and practice. But we come now to a principle not only more easily and extensively applicable, but perhaps more certain in the information it furnishes. We mean the law which governs the transmission of sound from one medium to another. "It may be announced as a general proposition, that whenever a vibrating body is brought into intimate contact with another, it communicates to it its own vibrations, more or less effectually as their union is perfect."‖ Yet when these bodies differ materially in density, "at each change of medium, two things happen; first a portion of the wave is reflected, and the intensity of the transmitted part is thereby diminished; secondly, the direction of propagation of the transmitted part is changed, and the sonorous rays, like those of light, are turned aside from their course. Thus the general wave is broken up into a multitude of non-coincident waves," "and the sound is stifled and obstructed."* To this principle, however, there is one important exception; "molecules of air, [much more then those of solids,] in a state of sonorous vibration, will impress on any body, *capable of vibrating in their own time*, a vibratory motion." "It is a pretty well authenticated feat, performed by persons of a clear and powerful voice, to break a drinking-glass by singing its proper *fundamental note* close to it. Looking-glasses are said to have been broken by music."† We see then why, in the examination of the heart and liver, the sound is lost to the ear applied upon the organ when percussion passes off from that organ upon the pulmonary tissue. Second, why the loss is not complete when in examining the heart, percussion passes on to the liver, or contrariwise, if the two viscera are in contact; and third, why sounds produced in solid substances are best conducted to the ear by solid media.

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* Renwick, Outlines of Nat. Philos. Art. 349, 350; and Peirce, Art. 26 and 33.

† Peirce, Art. 34. 35, and 36.

‡ Idem, Art. 31.

‖ Idem, Art. 151.

One principle more, and we will conclude this part of our subject. "Early inquirers into nature had remarked that in most instances of noise or sound there was present a *shock or trembling* of the sounding body;" but "the moderns understand fully that *sounds in all their varieties are merely such motions* affecting the ear through the medium of the air, or *of some other body or series of bodies reaching from the trembling thing to the ear*."‡ *Impulse*, then, is not only the concomitant, but the chief element of sound, and although it addresses itself to another sense, must of necessity obey the same laws of production and conductibility, as well when it is strong and communicates a sensible shock to the touch, or the ear, as when it is feeble and apparently lost in the sounding pulses. Hence we find, when the sound is strong and full, that the impulse is also strong; when the sound is feeble, the impulse may be scarcely felt, while it is wholly incapable of transmission in perceivable force from medium to medium when those media differ materially in density.

Thus we have enumerated all the principles of general application in the experiments and views, which it will be our next

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[*] Peirce, Art. 34. [†] Idem, Art. 64. [‡] Arnott's Elem. of Physics, Amer. Ed. pp. 402, 403.

duty to detail. And we have done this, first, because it forms the best preface to these views and observations, placing them, as we think, on a philosophical basis, above contingency or accident. Second, because in this way we were able to present an imperfect analysis of sound, and to refer to some of the laws both of production and propagation, varying and sometimes opposite, which affect each elemental quality separately—a kind of knowledge important to the successful study of organs and tissues by ausculatory percussion. And third, because it is following the method most strictly historic; for here it may be proper to say, that reflection on the laws of sound, prior to experiment, imperfect and badly ordered as is this department of science, led to the anticipation of results which have in many cases been strictly confirmed; and if such anticipations have not been fully realized in one respect, they have been exceeded in another; so that should any thing, of however small value, accrue to medicine from our inquiries, we shall owe the suggestion of it, at least, to a sister science.

But it is fully time we had opened our plan, and shown more at length to what practical issues we are tending. We propose, then, in the application of the laws now enumerated,

1st. To measure the heart in all but its antero-posterior diameters, under most, perhaps all circumstances of health and disease, with hardly less exactness than we should be able to do, if the organ were exposed before us.

We have been able to trace the outlines of the heart, when the whole organ has been covered with healthy lung; when the lung over it, and around it has been hepatized from inflammation, or consolidated by tubercles; when with such tuberculous consolidation, there has been remarkable thickening of the pleuritic membrane over the precordial region; when pleuritic effusion on either side has, to ordinary percussion, blended the cardiac and pulmonary portions of the chest into one region of unbroken dulness; when extreme effusion on the left side has crowded the heart wholly to the right of the median line upon the convex surface of the liver, so as to produce uninterrupted dulness, from the entire left side, across the anterior right half of the chest, to the hepatic region; when there has been empyema and pneumothorax of the left side; when there has been atrophy of the heart; when there has been hypertrophy and dilatation, each separately, and both combined; when there has been preternatural softening and fatty degeneration; when there has been pericarditis with adhesions;* when the stomach has been filled with aliment, or the abdomen with fluid.

2d. To trace the outlines of the liver with much greater certainty than by ordinary percussion, in circumstances of health; and to circumscribe it in many conditions of disease in which ordinary percussion is not applicable.

We are able to follow the liver nearly an inch higher on the chest, where its convex surface gradually retreats from the thoracic walls, than is usual in ordinary percussion; to trace its left lobe, and its lower border to the extreme limits of their thin edge; to distinguish the liver from the heart when these organs come in contact, whether the stomach be full or empty; to limit the upper surface of the liver when the right lung is hepatized; or when there is effusion in the right pleura; to limit the lower thin edge in the serous effusion of ascites; to mark the line of separation between the liver and spleen when the latter is enlarged, and the two organs are in contact.

3d. To ascertain the dimensions of the spleen in circumstances that baffle ordinary percussion.

We have traced the outlines of the enlarged spleen, in the midst of abdominal serous effusion, — distinguished it from the liver when it has approached, or been in contact with that organ: and we shall probably be able to limit it in all cases, except when abdominal effusion or a fold of intestine passes between it and the abdominal walls; and even in these cases, if there be a single point of contact on which to rest the stethoscope.

4th. To mark the superior, inferior, and external limits of the kidneys. Ascites presents no obstacle to the measurement of these organs; and from enlarged spleen the left is easily distinguished.

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* Auscultatory percussion promises to distinguish with facility serous effusion into the pericardium from any form of disease of the heart itself. But it is remarkable that more than three month's search among 1700 Dispensary patients, and even a greater number of Hospital sick and Almshouse invalids, which we were permitted to examine by the politeness of Dr. Vaché, should not have furnished us one case of hydro-pericardium.

Of so much have we assured ourselves by repeated trials. But it may be well, besides, to enumerate in passing, certain facts which have resulted from experiments on the dead, and observations on the living body; at present of more value, perhaps, as guides to farther inquiry, or as complicating in some cases the study of organs, than as practical results. We find, for example, that among the tissues of the body, bone is the best conductor of sound; that cartilage is but little inferior to bone in this respect; that muscle when tense is a good conductor,—relaxed, it hardly conducts at all; that fatty tissue uncondensed conducts badly; that œdematous cellular tissue has a minimum conducting power; that any tissue or group of tissues under tension conduct better than when relaxed; that the spinal column is a bad conductor; that both sound and impulse are transmitted from one bone to another, through interposed soft tissues, if such tissues be condensed by moderate pressure; that articulations in a healthy state conduct both sound and impulse, but with loss of energy; that sound and impulse are not entirely lost in passing through two successive articulations; that fractures and dislocations do not in most cases wholly interrupt the conduction of sound; and that the sound is more intense than natural in passing through certain diseased joints.

Some of these latter propositions deserve particular consideration. That bone should be both sonorous and conductive, might be inferred from its structure; but that sound should make its way through an articulation where it has to pass, first, from bone to cartilage, then from one cartilage to another, and lastly, from cartilage again to bone; and even where the transitions are still more numerous, as in the joints which possess "moving cartilages," would have been anticipated only by a reference to two facts: first, the *fundamental note* of cartilage differs little from that of bone, (of this one may satisfy himself by examining the bony and cartilaginous portions of the same rib,) and consequently vibrations produced in one are easily taken up and carried forward by the other: and second, the union between cartilage and bone in the joints is intimate, and between cartilage and cartilage the contact is firm. It is true that in every such transmission something is lost, but the loss is no way proportioned to the number of medial changes.

Here arises the practical question, in what conditions will sound be conducted through joints with more, in what with less, than normal energy? This question we are not yet prepared to answer satisfactorily. In a single case of scrofulous disease of the hip, in which immobility occurred in the second year, in consequence, as was supposed, of bony union of the femur with the pelvis, the sound of percussion on the inner condyle, at the knee, was much more distinctly conducted to the symphysis pubis, or to the spine of the ilium through the diseased, than through the healthy joint. Beyond this we have no facts. But it is reasonable to suppose that bony anchylosis of a joint would be nearly, or quite as conductive as a continuous shaft of bone; while false anchylosis would differ little from healthy joints. Should this be found a means of diagnosis between immovable false, and true anchylosis; 'a distinction difficult in all cases,' says Sanson, 'and in many impossible,'* its practical value need not be pointed out to the surgeon. Again, if the conducting power of a joint be, on the other hand, diminished, we should be led to suspect that a morbid product less dense than bone or cartilage, had separated the articulating surfaces; that the articular cartilage had been separated from the bone, &c., depending on the general character of the disease.

In regard to dislocations and fractures, we have to say that the results of experiment have disappointed our anticipations. No principle of philosoply, with which we were acquainted, had led us to expect that simple contact was equivalent to continuity of structure in the conduction of sound; or that accidental contact at a single point, as in dislocations, was equal, or nearly equal, to the wide and nice adjustment of part to part in an articulation. Yet, when in the dead body the tibia was fractured, which was done a little below its middle, and the fractured ends placed nicely in apposition, or rather hardly yet displaced, (auscultation on the anterior and inner face of the bone above the fracture, percussion on the same bone near the ankle,) sound was conducted through the solution of continuity with apparently the same intensity and impulse as before the fracture; and comparison with the tibia of the other leg showed little or no difference in conducting power. When, however, the slightest

* Dic. de Med. and Chirur. Prac. Art. Anchylose.

appreciable space existed between the fragments, both sound and shock were lost. Re-adjustment, with absolute contact of points, but less perfect than at first, restored both sound and shock, only recognisable as less perfect than before, by comparison with the unbroken bone. In practice, however, it will be found very difficult to establish that degree of apposition necessary to restore, even in moderate fulness, sound and shock. Examine, for example, a recent fracture of the femur, in which, as is usually the case, the broken portions shoot past each other by the contraction of the muscles, and are applied side to side. If the leg be extended and the patient lie on his back, the muscles being fully at rest, it will often be found that percussion at the internal condyle communicates no sound whatever to the symphysis pubis, or spine of the ilium. Press the bones together with the force of 12 or 14 lbs. by applying one hand at the seat of the fracture, and the other on the opposite side of the limb at the knee, so as to correct the curve of the leg; the listener will now hear the sound distinctly, but without intensity, and with feeble impulse. At the end of five or six days, as the surgeon "sets the limb," when the extremities are brought in position by the dressings, if he examine the conducting power of the part again, percussion being applied to the inner condyle, as before, by a small opening left or cut in the dressings; he will find the sound has not yet recovered its full intensity and impulse.

The following details may have some trifling value in their practical bearing on fractures, while at the same time they corroborate the statements just made regarding the conducting power of articulations. *Fibula*—Applied the stethoscope to the outside of the upper head of the fibula, and made percussion on the external malleolus. Sound came through the instrument, sharp, clear, communicating a strong shock to the ear. Percussion on the lower part of the *tibia* gave a modified sound, more grave, and distant, and less impulsive, though still communicating a distinct shock. An attempt was made to break the fibula in the middle of the leg with a mallet; but before feeling for fracture, listened to percussion. Sounds in all respects as before — bone was not broken. Made now an evident fracture with separation of fragments, three inches above the extremity of the maleolus externus. Stethoscope and percussion as before. Sound dull, grave, muffled, shock very slight: percussion on the lower extremity of the tibia, sound fuller, and impulse stronger: percussion on the upper extremity of the tibia, sound and impulse still augmented. Now applied percussion with a wedge-shaped pleximeter, along the course of the fibula progressively from below upwards, commencing at the external malleolus. The listener pronounced instantly when the pleximeter touched the upper fragment of the broken bone, by the renewal of the acute, clear, impulsive sound, slightly modified by the cushion of soft parts that surrounded the broken extremities—percussing in like manner from above downwards, there is a sudden loss of acute, impulsive sound the instant the pleximeter passes off from the upper fragment. It would seem, then, that the soft parts are not interested in the conduction of sound in this case; for the maximum difference in intensity is found to be within the fraction of a line, and to depend solely on whether auscultation and percussion are, or are not on the same fragment of bone. It would appear, also, that the slight impulse and sound conducted to the ear after the fibula was broken, were conducted from the external malleolus through the lower tibio-fibular union to the tibia, along the tibia, through the upper union to the fibula, and thence to the ear; changing media, (without counting soft parts,) six times, and direction twice, before it reaches the stethoscope.

If we turn for a moment to dislocations, we shall find auscultatory percussion of less value than in fractures. Mark for example, the conducting power of the hip joint in the dead body, then make successively all the dislocations to which the part is subject, comparing the sound furnished by each abnormal position of the head of the femur on the pelvis, with that conducted in the natural condition; the differences in conductibility will be too inconsiderable for practical utility. Similar examinations of the shoulder joint will, at least in the dead body, lead to no more satisfactory results. For if the dislocation be into the axilla, the head of the bone rests against the anterior edge of the scapula; and if it be forward under the pectoral muscle, still the bone is in contact with the edge of the glenoid cavity; in either case, sound is conducted from the condyles at the elbow to the spine of the scapula with nearly normal force. Still again, we have attempted to apply our method to the diagnosis of fractures of the neck of the femur; imitating that accident by dividing (cutting only as much as was indispensable) the muscles and soft parts; and then with a narrow, small saw, severing the bone: and also to the fracture of the neck of the scapula, imitating that also in a similar manner: but all we can yet say is that, whenever fracture or dislocation occurs with separation of the disunited portions, in such a manner as to destroy bony continuity by contact, the indications of auscultatory percussion are unequivocal; but that in the major portion of these accidents, it can be relied on only as accessory evidence. We wish, however, to state, that the whole matter is still under investigation, and may yet lead to more important results; and that one point will be made a subject of early and special inquiry. This is to ascertain if the plastic matter thrown out by the fractured extremities of bones does not, up to a certain point of induration, interrupt the sound. Whether this is, or is not the case, depends on whether at any point in the progress of healing, the bony particles in the two applied fragments are separated from actual contact, either by absorption, or by the deposition between them of a secretion markedly less dense than the osseous tissue. Should this be found a means of distinguishing the stages of healing in a broken bone, without removing the dressings, we need not dwell on its importance to both patient and surgeon.

We pass now to the comparative study of the sounds furnished by certain parts and products of the body, with the view of establishing them as type-sounds, with which to associate or contrast others. We may assume for this purpose, those furnished by water and by bone as the extremes in the scale, and call them, for convenience, *aqueous* and *osseous*. Of these the osseous, as has been already more than hinted, is the most highly characterized, and most easily distinguished from others; in pitch it is highest; in energy it is intense, striking on the ear with even painful force; in quantity full and loud; conducted to the greatest distance; somewhat prolonged and slightly ringing; immediate, clear, and impulsive.* A watery fluid within the abdominal, but especially within the thoracic walls, seems to transmit through those walls, very imperfectly, its own peculiar sound. Though a good conductor itself, it communicates sonorous pulses to a more solid body with great loss. Hence notwithstanding it possesses appreciable positive qualities, it is on negative properties that we, to some extent, rest our judgement regarding it. In the abdomen, within short distances this sound is quick, immediate, acute, of moderate intensity, abrupt, inelastic, and much less conductible and impulsive than the preceding. In the chest its characters are with difficulty distinguished. Indeed, the sounds of fluid, and of healthy lung, examined through the thoracic walls, so nearly resemble each other, that it is probable neither of them is capable of communicating, in any considerable degree their vibrations to these walls, but that it is chiefly the parietal sound which the ear receives. Hence the ease of distinguishing from fluid in the chest, a solid or consolidated organ — hence also the superiority of ordinary percussion in the examination of the rarer media. The hepatic and cardiac sounds, in most of their qualities, fall between those just described. They have already been referred to at some length, and will consequently now require but a word. *The cardiac* approaches nearest the osseous; it has acuteness, clearness, and conductibility in the tissue producing it, but in a less degree than that of bone; it is quick; immediate; intense; rather painfully impulsive; and gives, at the circumference of the organ particularly, a sort of muffled metallic ring. *The hepatic*, compared with the cardiac, is more grave, more continuous, less freely conducted by the organ in which it is produced; but is clear, intense, immediate and impulsive. With one or other of these sounds, it may be convenient to compare all other sounds that we may have occasion to study. It will be seen that they have

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* For the sake of conciseness and perspicuity, we will use the following terms in describing sounds only in the senses here annexed to them. *Immediate*, to signify that the sound comes to the ear as if applied directly to the extremity of the stethoscope; opposed to distant. *Abrupt*, (abrumpo, to break off,) to refer to the termina-

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tion only; opposed to prolonged, reverberant, &c. *Distant.* It often happens that a sound is heard by the open ear alone, or by that applied to the stethoscope, only when the other is closed by the finger. No impulse comes with it, and it is plainly produced in some body foreign to that on which we are listening; opposed to immediate, intense, impulsive, &c. *Quick*, to signify the same as when used with reference to the pulse, describing the time occupied by the sound in developing itself. *Acute*, to refer to the place a sound has in the diatonic scale; opposed to grave. *Impulsive*, to describe the shock or jar, of which the external ear mainly takes cognizance, as possessing the sense of touch. The shock or impulse accompanying sound so limited, is not in all cases proportioned to loudness, or intensity.

many properties in common, while each possesses characteristic qualities. Water in the abdominal cavity is distinguished by quickness, abruptness, and a sort of leaden inelasticity — bone by its high pitch, clearness and great conductibility — liver by its graver note, diminished conducting power, and semi-reverberency; while the heart falls between the two last, and is recognised more by the degree, than by the distinctive nature, of its qualities. The sounds of healthy lung, of tympanitis, and of pneumothorax, differ indeed widely from any here described, but we leave them to ordinary percussion, since their vibrations are much more fully conducted by air, than by a solid medium.

It has been already sufficiently explained that the leading peculiarity of our method consists in the manner of conducting to the ear the sounds elicited by percussion of the solids of the body. The instrument we have found most convenient, and most generally applicable, is a solid cylinder of cedar, shaped in the direction of the woody fibres, 6 inches in length, and 10 or 12 lines in diameter; furnished with an earpiece which will allow nearly the whole cylinder to pass through it, so that it may apply directly to the tube of the ear without change of medium. To avoid as much as possible the sound of the thoracic walls, as is desirable in some cases, this instrument has been modified, by reducing it at its objective extremity, to a truncated wedge, leaving the other extremity as before. This is applied between the ribs so as not to touch them, and at the same time approach somewhat nearer the object under examination. The common stethescope may be used, but it conducts less perfectly than the solid instrument, and for obvious reasons. The question whether the bones around the ear conduct, or assist in conducting the sonorous pulses to the auditory nerve, however important in other relations, need not here be examined. It is sufficient for our purpose, if experiment prove that these instruments give us the fullest perception of the sounds we wish to examine.

Regarding percussion, we find a pleximeter in the examination of thoracic and abdominal organs almost indispensable. An impulse is to be sent through an external covering composed of separate layers, to a viscus beneath. This impulse loses little by the interposition of light solids, but much if loose or badly approximated tissues intervene. It is then desirable that the tis-

Pl. 1.

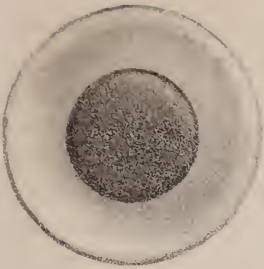


Fig. 3.

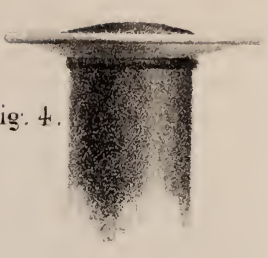


Fig. 4.

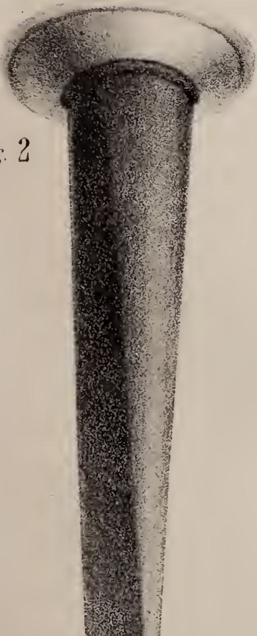


Fig. 2

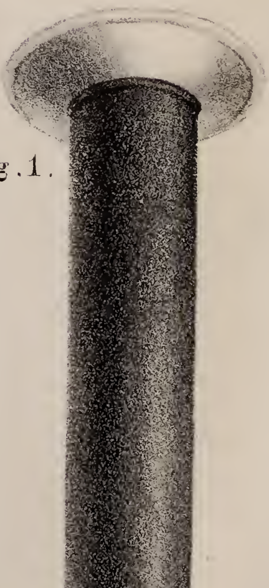


Fig. 1.

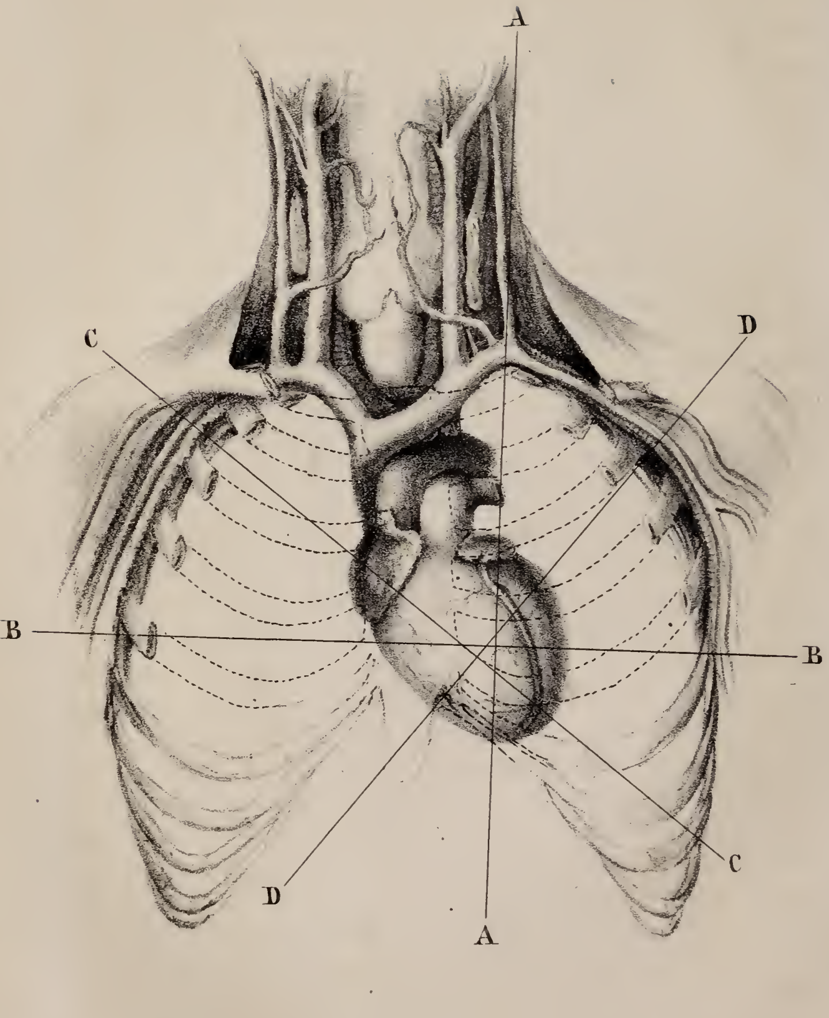
Fig 1. Cylinder Stethoscope, Solid.

Fig 2. Wedge Stethoscope; Truncated extremity two lines wide.

Figs 3 & 4 Views of aural extremity.

N. Curriers Lith. N.Y.

Pl. 2



N. Curriers Lith. N.Y.

sues of the thoracic or abdominal walls be consolidated as much as is practicable. This indication is conveniently fulfilled by moderate pressure with a finger of the left hand, while this same finger serves sufficiently well as a pleximeter. The same consolidation and full contact is still more important at the point where the sonorous vibrations are to be received upon the stethoscope, but this is easily effected, and almost without the design of the listener, by the pressure necessary to apply the aural extremity of the stethoscope firmly to the ear.

We come now to speak of the measurement of the heart; and shall devote to this branch of our subject, the remainder of the present essay, both because, to be able to measure with accuracy the heart in the living body has long been considered a desideratum in our art; and because the facts with which we can enter on the examination of this organ, we think, cannot fail to demonstrate the practicability of our method. The lines we have chosen in our measurement may be objected to. We are willing to admit that the distance across the base, and that from the apex to the base would be serviceable additions. But we assert from numerous inspections, made for the purpose of learning the position of the heart in the dead body, that when disease is suspected, (and such is the case with most hearts we are called on to examine,) it is impossible to know the base line, previous to tracing the entire circumference of the organ. Its direction varies in health, much more then in disease. The lines we have found best to suit our purpose are, a *vertical diameter*, A. A., which commences at the base of the heart just outside the origin of the aorta, and runs downward parallel with the median line of the body. A *transverse diameter*, B. B., which intersects the former at right angles near its centre. A *right oblique diameter*, C. C., which applies from the upper right border of the right auricle to the apex, as if drawn from the top of the right shoulder. And a *left oblique diameter*, D. D., intersecting the right oblique at right angles, and ending where the right ventricle and auricle unite. In adopting these diameters, we mark eight points nearly equidistant in the circumference of the heart, and the intermediate points of the outline are easily filled up by the same method of exploration; so that we can have the entire figure of the organ drawn upon the chest, and can measure any of its lines and directions at will.

At once to illustrate the mode of taking these diameters, and to apply what appeared to us the experimentum crucis to many of the foregoing rules and principles, we will describe one of our earliest observations on the dead body.

Heart, first trial. Body, that of a well-formed man about 60 years of age. The precordial region was first examined by ordinary percussion, and the heart circumscribed as nearly as possible in ink lines. The stethoscope was then placed in the centre of this region, and percussion applied over what was already recognised to be the heart. The cardiac sound was full and distinct. Percussion was then applied at a distance from this centre, off from the heart, and made to approach it gradually in the line of a radius. This was done for each extremity of the four diameters. Wherever in the approach a sharp percussion sound was heard accompanied with a muffled metallic ring, there a mark was made on the chest. The exploration was repeated two or three times by the three persons present with strict coincidence of result; and the marks were united with ink lines. Thus we had drawn two nearly circular figures, corresponding at their lower limits, but the first nearly an inch within the last at all other points. Much difficulty was experienced in distinguishing the heart from the liver, in the direction of the lower limb of the left oblique diameter. The liver and heart were evidently in contact; the sound of percussion on the former was conducted with unexpected force to the stethoscope placed on the latter. After repeated attempts, however, in approaching with percussion from the liver, we recognised at a certain point a change in the sound, it becoming more acute and more impulsive; receding from the stethoscope, beyond the same point the sound was more grave and less intense: now placing the instrument on the liver, and approaching it from the heart, or receding from it to the heart, strictly corresponding changes were noticed at the same point. That point was fixed on as the limit of the heart. Eight long steel needles, (common knitting needles,) were now inserted in the circumference of the outer circle, so as to correspond with the extremities of the four diameters, and driven at each point *perpendicularly to the surface of the chest at that point.* The precordial region of the thorax was then removed by a circular cut, within the circle of the pins;

when it was found that every pin had either entered the pericardium, or had passed less than a line outside of it. Four passed through it, just touching the heart, one only had penetrated the organ, and that was at the upper extremity of the right oblique diameter. It had entered the right auricle, half an inch from its upper right border. The heart was very much enlarged, and the right auricle distended with blood. It is important to add, that the pins on the left side passed through a skirt of lung which overlaid the heart two inches; and that at the apex, penetrating more than an inch of this lung, entered the pericardium, and was found just touching the heart. The dimensions of the heart *in situ* were, vert. diam. $4\frac{9}{12}$, — trans. $6\frac{10}{12}$ — right oblique, $6\frac{9}{12}$, and left oblique, $6\frac{6}{12}$ inches. Such was the result of our first experiment, without any previous knowledge of the cause of death, or the condition of organs.

Here it will be proper to remark, — first, to get the full characteristic sound of the heart, it is indispensable that the stethoscope be placed on a part of the chest, with which the organ comes in contact; and we insist on this point, because we wish to forewarn those who may pay our method the compliment of a trial, that should their first case be one in which the lung nearly or quite covers the heart, they may be unable strictly to verify our description. Yet a little practice with good cases, will enable them to measure the organ with great facility, not only in such a case, but in every normal or abnormal condition in which it is likely to be found. Second, the difficulty of distinguishing the right lower limit of the heart from the liver is of frequent occurrence, and is to be attributed, as has been already said, to the fact that the two organs differ but little in consistency, and that their fundamental sounds vary but two notes and a half on the diatonic scale. Hence if they lie in contact, as often happens, the sounds produced in one are communicated to the other with but moderate loss. Yet in the transmission from either viscus to the other, it undergoes a change from acute to grave, and loses some of its impulse. A little practice will overcome the difficulty; but we advise that, in all the earlier cases when it occurs, the observer should explore from each organ. Third, (for we think it well to bring together into one paragraph, all the circumstances that may embarrass the examination of the heart, whether pertinent to the case before us or not,) it sometimes happens that it is difficult to limit the right side of the heart, on account of the presence of the sternum. This appears to act as a large pleximeter, and to diffuse the force of percussion, directing upon the heart a portion of that which was intended for the region beyond it. This however, is an inconsiderable difficulty, if separated from another with which it is usually complicated. We refer to the sonorousness of the sternum. This, when it is considerable, is conducted along the cartilages of the ribs to the stethoscope, and masks the true cardiac sound. The remedy however is simple. By using the wedge between the ribs, instead of the cylinder upon them, we exclude the osseous sound. In this way we commonly obviate both difficulties together. Still it may be sometimes necessary for the confirmation of a doubtful limit, to place the stethoscope over upon the right lung, and mark the point on the side of the heart, at which we first obtain the thoracic sound. Fourth. Care is often necessary, that the conducting power of the ribs does not embarrass the exploration of the left side of the heart. It sometimes happens, if we listen and percuss on the same rib, that the osseous sound comes up so full and strong to the ear, as to conceal the cardiac. The remedy is simple. Move the stethoscope, if there be a sufficiently wide space of contact between the heart and walls of the chest; if not, use the wedge. Fifth. We have met persons in whom the whole precordial region was to ordinary percussion, peculiarly sonorous, from pulmonary emphysema. In such our method is difficult of application, on account of the fulness of the parietal sound. But if we press the stethoscope with considerable firmness against the chest, so as to depress a little the cartilages of the ribs, and thereby condense in a small degree the lung, (which can be done without giving pain,) or use the wedge between the ribs, we overcome the difficulty. It is well in addition, to percuss with somewhat increased force. Sixth. The position of the heart changes in its lateral dimensions, with changes in the position of the body. It gravitates towards the side on which the patient may be lying; so that between decubitus on the right, and on the left side, there may be a deviation to one side or the other, of nearly an inch. Again, the mobility of the integuments of the chest, in obedience to motions of the arms or head may lead to error. Hence an obvious rule, that during the examination the patient preserve as nearly as possible one position. Seventh. The breast in females need not be considered an obstacle to the measurement of the heart. It may be held aside either by the left hand of the patient herself, or by a bandage; or if neither of these can be done, pressure on the part with the finger used as a pleximeter, will enable us to explore as in any other case,—only in this, it will be well to mark first the right limits of the heart, and when the left are found, to measure each diameter in its turn before the finger has been removed. And lastly, we remark, that percussion *may be* too strong, so as soon to fatigue and confuse the ear. It should be usually performed with a single finger, and may be so feeble as to be scarcely audible to a bystander. These remarks will render lengthened details in reporting further experiments on the mensuration of the heart, unnecessary; and for this purpose they have been here embodied.

The next trial we have to report, was on a body approaching decomposition. Cause of death and condition of organs unknown. Subject, a female about 40 years of age. Gas had been generated within the chest, so as to separate the walls from the lung and heart; for this reason, ordinary percussion could not recognize with any degree of distinctness the position of the heart. The stethoscope was applied to the precordial region with sufficient force to depress the thoracic walls, and bring them in contact with the heart. Percussion was first made over the heart, to acquaint the ear with the sound of the organ under these circumstances, then at a distance; and the outlines drawn as before. The same difficulty was encountered in this case as in the first, in the direction of the right lobe of the liver, and overcome in the same way. Ten needles were introduced, and on opening the body, *nine* of them were found to have entered the pericardium, and to have passed between that membrane and the heart. One only had pierced the heart; that had entered the right auricle, five lines from its upper right border, in the line of the right oblique diameter. In this case, the left lung was hepatized, and overlaid the heart more than an inch. The needles on the left side had penetrated then, this consolidated skirt of lung, though separated from the thoracic walls by gas, in passing to the apex and border of the heart. The organ was atrophied, and the right cavities contained blood. The following are the dimensions by auscultatory percussion, and by measurement *in situ* after the body was opened.

By ausc. per. vert. diam. 3 in.; trans. $2\frac{10}{12}$; R. obl. $3\frac{7}{12}$; L. obl. $2\frac{8}{12}$.
" inspect. vert. diam. 3 in.; trans. $2\frac{9}{12}$; R. obl. $3\frac{11}{12}$; L. obl. $2\frac{7}{12}$.

Third trial.—Subject a female, a coloured child of eight years, that had died of tuberculous disease, affecting mainly the abdominal organs, and much emaciated. Exploration as before. Five pins were introduced. Four of them entered the pericardium, passing between it and the heart,—that at the right superior limit passed through the border of the auricle. Right cavities contained blood. The following are the dimensions:—

By ausc. per. vert. diam. $2\frac{7}{12}$; trans. $2\frac{10}{12}$; R. obl. $3\frac{2}{12}$; L. obl. $2\frac{8}{12}$.
" inspect. vert. diam. $2\frac{7}{12}$; trans. $2\frac{10}{12}$; R. obl. $3\frac{4}{12}$; L. obl. $2\frac{6}{12}$.

Fourth trial.—Subject, a female, aged 62 years. Cause of death, fever; body emaciated. Mode of exploration as above. Eight pins were introduced. After the outlines of the heart had been traced, and before the pins had been driven, the subject was incautiously moved upon the table. When the body was opened, the left portion of the pericardium was found empty for the space of half an inch or more, and the heart had gone over full against its right side. Two pins only were in simple contact with the heart. Those were the two marking the vertical diameter. The three on the left side were nearly a line outside the pericardium, and from six to eight lines from the left border of the heart; while the three on the right side entered the right auricle and ventricle, about the same distance within this right border. Comparing the diameters taken before and after opening the body,

By ausc. per. vert. diam. 4; trans. 4; R. obl. $4\frac{6}{12}$; L. obl. 4
" inspect. vert. diam. $3\frac{10}{12}$; trans. 4; R. obl. $4\frac{9}{12}$; L. obl. 4

they were found very nearly to correspond; and it was evident not only to ourselves, but to Drs. Coolidge and Davenport, who were present at the opening of the body, that the heart had changed position in moving the subject on the table. Piorry refers to this source of error.

Fifth trial.—A man of about 45 years. Cause of death and condition of organs unknown. Exploration was difficult; the thoracic sound being heightened, and more distinct than the cardiac. Eight pins were used. On opening the body, the pleuritic membrane on the whole anterior of the chest was found thickened from one to two lines, and semi-cartilaginous. That from the right side seemed to have blended by mediastinal disease, with that of the left. The pericardium, though not thickened, adhered by nearly dried lymph closely to the heart at every point; so that it was necessary to dissect it off, before all the needles could be inspected. Six were engaged in the substance of the pericardium, without entering the heart, or passed less than a line outside of it. Two, those on the right limbs of the trans., and right obl. diameters, had passed through the border of the heart; one into the right auricle four lines within its border, the other through the ventricle two lines within its border. The right cavities were filled with blood; little in the left. It should be added, that the lungs were tuberculous in this case, and, that the skirt covering a portion of the heart from the left side, was nearly consolidated. The measurements are,

By ausc. per. vert. diam. 4; trans. 4; R. obl. $4\frac{6}{12}$; L. obl. 4.
" inspect. vert. diam. $3\frac{10}{12}$; trans. $4\frac{1}{12}$; R. obl. $4\frac{9}{12}$; L. obl. 4.

Sixth trial.—Subject, a large man, of 64 years; adeps abundant; cause of death and condition of organs unknown. Exploration as usual; the cardiac sound less pronounced than in most cases, yet easily distinguishable. Eight needles were introduced; all were found to have entered the pericardium or were engaged in its substance; *not one* had gone through any portion of the heart. The organ had undergone fatty degeneration of the right ventricle, and general softening of its muscular substance. It was much enlarged, and so flabby that when the pins were removed it could not be satisfactorily measured. It contained very little blood,—the right auricle was empty. Dimensions by auscultatory percussion, were, vert. diam. $4\frac{6}{12}$; Trans. 5; R. obl. $5\frac{9}{12}$; L. obl. 5

These six trials will be considered sufficient, we think, to demonstrate the possibility of measuring the heart, with reasonable exactness, through the thoracic walls. They are given in the order in which they were made, without selection or exclusion; and the results they furnish have, in other similar observations, been repeatedly confirmed, and in no respect invalidated. They embrace an unexpected, even a remarkable variety of conditions and complications. In no case had we made any examination of the organs during life; we saw indeed, but one of the subjects before death. Of the number, two were middle aged, one was a child, and three were 60 or upwards. In one, the heart was affected with hypertrophy and dilatation; in one with dilatation and fatty degeneration of the right ventricle, and dilatation with softening of the left; in one the organ was remarkably small; and in one were pericardial adhesions throughout. In all, the lung overlaid more or less of the heart; in one, covered it almost entirely; in one the overlaying portion was hepatized; in one, nearly consolidated by tuberculous deposits; in one, gas was interposed between the heart and the thoracic walls; and in one, a shield of semi-cartilaginous false membrane covered the whole precordial region. In four cases, the right auricle contained or was distended with blood, and in these four cases it was penetrated two to six lines from its border. Blood it would seem then, although coagulated, is not a good conductor of sound, or if it be, it does not transmit it freely to the muscular structure of the heart; and the tissue of the auricle is too much attenuated to possess of itself much conducting power. Hence the difficulty of limiting this portion of the organ when so filled, by any means yet explained. But luckily this state of passive congestion is mostly a post-mortem condition. Yet it may be well here to add, that in more recent observations, by marking in such cases a region of dulness beyond the limit of cardiac sound; by advancing the stethoscope nearer to the seat of difficulty; and by exploring from over the right lung, we have met with more complete success.

Thus much for the dead: and now it may be asked, What can be done in the living body? We prefer to answer by a detail of facts. The first class of cases that we will present are five in number, arranged in tabular form. The measurement of hearts taken by auscultatory percussion, in the course of chronic incurable diseases, is exhibited; and in parallel lines are shown the diameters of the same organs, taken at post-mortem inspection of the body, one to eight weeks afterwards. At first view, post-mortem measurement would seem a proper test of the correctness of that made during life. But a moment's reflection will show that in any individual case, it can be of little value. During life, the heart in its natural action is continually changing form, and, by auscultatory as by ordinary percussion, (if it is indeed possible to ascertain its dimensions by the latter,) diastole is probably the condition from which the diameters are taken. We are seeking the heart at any one point of its supposed circumference; we explore by percussion repeated on that point two or three times. Should either one of these blows give us the cardiac sound, we mark the spot, if by examining farther outward in the same way we have not found it. Now, as diastole and the state of quiescence together occupy so large a portion of time in the circle of the heart's action, there is a probability that the organ will be under the finger, placed within the sphere of its usual expansion, at the time of the first blow of percussion, and this probability increases with each blow repeated in quick succession. Again, if the circles of habitual systole and diastole were marked upon the chest, we should probably find it difficult to make even two successive blows upon the outer circle, in the time the heart is absent from it in systole. To say the least, a little care will enable us to take the organ in its usual greatest dilatation, while it would be very difficult to ascertain its dimensions in systole. If, then, we measure during life, in healthy diastole, it is plain, that to find corresponding dimensions after death, we must seek a corresponding condition, as contrasted with emptiness on the one hand, and with passive and forced congestion on the other. Yet every pathologist knows that this equal and moderate distension of *all the cavities* is not the most common post-mortem condition; however near an average of the ever-varying state of fulness of different parts, taken from a large number of cases, might represent it. The remarks appended to the following table will illustrate this point.

TABLE I.

Showing the Dimensions of Five Hearts, as taken before and after death.

	Measurement before death. DIAMETERS.				Interval between meas't & death.	Measure't after death, in inches and lines. DIAMETERS.				Cause of death.	Blood in the Cavities.
	Vert.	Tran.	r. obl.	l. obl.		Vert.	Tran.	r. obl.	l. obl.		
No. 1,	3.11	4.2	5.	3.10	4 wks.	4.6	4.	4.11	3.11	Phthisis.	Right Cavities distended, left empty.
No. 2.	4.	5.	5.2	4.6	1 wk.	4.	4.11	5.4	4.5	Phthisis.	All the Cavities moderately distended.
No. 3.	3.10	4.	4.2	4.	8 wks.	3.10	4.	4.10	3.5	Hæmop's in the progress of Phthisis.	Ventricles contracted and empty; blood in the right auricle.
No. 4.	3.6	4.6	4.3	4.1	5 wks.	3.	4.3	4.1	3.6	Phthisis.	Ventricles firmly contracted; a little blood in the right auricle only; apex elevated.
No. 5.	4.6	4.7	4.10	4.3	1 wk.	4.6	4.6	5.9	4.3	Erysip's in the course of hepatic and cardiac disease.	Right auricle crowded with blood; vent. and left cavities contained but little.

We remark of these cases, that in the second only, is there any thing like a correspondence of diameters as taken before and after death; and in this it is noted, that each of the cavities contained a moderate quantity of blood. In the first, the vertical diameter, more than half of which lies usually on the right ventricle, is lengthened after death by the passive distension of that cavity. In the third, the right oblique diameter is augmented by engorgement of the right auricle; while the left oblique is shortened more than half an inch by the contraction of the ventricles, (over which it wholly lies.) In the fourth, the point of the heart being more elevated, the vertical and left oblique are also shortened by firm contraction of both the ventricles; and in the fifth, the right oblique is again extended by forced dilatation of the right auricle. So in none of these cases have we a strict correspondence of dimensions. An error of a line or two may result from using the finger as a pleximeter, on account of its width. And the size of the heart may even vary somewhat, in different states of health, during life.* Yet with all the allowances and corrections that can be made, it is obvious, independently of any measurement, that the dimensions of a heart in healthy action, will vary from those of the same heart, after death.

Abandoning this ground then, we appeal to averages. And here again an objection meets us:—the frequent post-mortem congestion of the right cavities, and particularly of the auricle. Still, with a fractional correction for this fact, we are willing to rest the practicability of our method on a comparison of the means, derived from auscultatory and post-mortem measurements. And first, let us see how nearly an average will annihilate individual differences in the above five cases.

	Vert. Diam.	Transv. *D.*	Rt. Obl.	Lt. Obl.
Dimensions of the living heart by ausculatory percussion,	3.11+	4.5+	4.8+	4.1+
Dimensions of same organ by post-mortem inspection,	4.—	4.4	5.—	3.11

The deviation is trifling, except in the right oblique diameter, where it is less than four lines.

Now, for the purpose of obtaining a criterion of comparison, we will present twelve additional measurements of men's hearts, taken after death, rejecting all in which there was, either during life or on post-mortem inspection, any evidence of disease; and deduce from them an average for the healthy male heart.

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* See Piorry's case, Procédé Opératoire, &c. p. 121.

TABLE II.

					DIAMETERS.					
	Name.	Age.	Stature	Girth of chest.	Vert.	Tran.	r. obl.	l. obl.	Total.	Cause of Death and condition of the Heart.
No. 1	Jas. W.	30 y's	5 f. 1 in	35 in.	4.8	4.11	5.3	4.	18.10	Injury of the Head. Heart — all the cavities full of blood. Vertical diameter from base to apex.
2	Wm. B.	58 –	5 8	37 –	4.6	5.	5.6	3.10	18.10	Pleuro-pneum'ia — right cavities crowded, auricle almost to bursting.
3	Edw'd B.	28 –	5 7	33 –	4.6	4.	4.11	3.11	17.4	Phthisis — right cavities moderately filled.
4	Pat'k B.	24 –	5 7	32 –	4.	4.11	5.4	4.5	18.8	Phthisis — right cavities full.
5	John R.	29 –	5 5	33½–	3.10	4.	4.8	3.8	16.2	Hæmoptysis, sudden — right auricle only filled.
6	Wm. D.	30 –	5 8	32 –	3.10	4.2	4.6	3.5	15.11	Scrofulous knee — blood mostly in right auricle.
7	Geo. B.	32 –	5 6	37½–	3.3	4.8	5.1	3.11	16.11	Injury of head — all cavities contained blood; right auricle distended.
8	James J.	26 –	5 7	32 –	4.	3.10	5.	3.7	16.5	Fever — left ventricle empty; other cavities contained a moderate quantity of blood.
9	Geo. R.	26 –	5 5	33 –	3.	4.3	4.1	3.6	14.11	Phthisis, rapid — Ventricles spasmodically contracted, and a little blood in auricles.
10	Pat'k Mc.	45 –	5 6	34 –	4.	4.2	4.9	4.	16.11	Pneumonia — right cavities filled; little in the left.
11	Sam'l H.	32 –	5 5	34½–	3.11	4.5	4.11	3.10	17.1	Arachnitis — a little blood in all the cavities; right auricle full.
12	John F.	26 –	5 5	32½–	3.10	3.10	4.7	3.9	16.	Phthisis — blood in each cavity.
	Average,				4.	4.4	4.10	3.10	17.	

In connection with this we exhibit, also in a tabular form, the measurements of twenty-four male hearts, believed to be perfectly healthy, taken by auscultatory percussion.

TABLE III.

					Diameters by Auscul'y Percus'n.				
	Name.	Age.	Stature.	Girth of Chest.	Vert.	Trans.	R. obl.	L. obl.	Total.
No. 1	Wm. G.	24 ys.	5 ft. 4 in.	33 in.	3.6	4.6	4.	4.7	16.7
2	Thos. Mc.	27 "	5 7	34 "	3.6	4.6	5.2	4.	17.2
3	John D.	45 "	5 5	33 "	4.	3.8	4.2	4.6	16.4
4	Robert T.	29 "	5 3	31½ "	3.8	5.	4.6	4.	16.2
5	John E.	29 "	5 6	37 "	4.	3.7	4.	3.11	15.8
6	John Mc.	26 "	5 6	32 "	4.	4.	4.	4.	16.
7	James R.	29 "	5 5	33½ "	3.10	4.	4.2	3.8	15.8
8	George C.	30 "	5 11	33 "	4.1	4.	4.	4.3	16.4
9	Rich'd V.	30 "	5 7	34 "	4.3	3.4	4.9	3.10	16.2
10	Philip M.	28 "	5 7	32½ "	4.	3.10	4.7	4.	16.5
11	James V.	29 "	5 6	33 "	4.3	3.3	4.9	3.9	16.
12	Henry C.	24 "	5 10	35½ "	4.6	4.	4.6	4.5	17.5
13	Martin M.	25 "	5 9	39 "	4.1	3.11	4.6	4.	16.6
14	Pat'k Mc.	25 "	5 8	35 "	3.11	4.	3.11	4.1	15.1
15	Barney O'.	36 "	5 11	37 "	4.	4.	4.6	4.4	16.10
16	James R.	26 "	5 4	33 "	4.6	3.6	4.3	4.5	16.8
17	John Mc.	43 "	5 7½	36½ "	3.3	4.8	4.10	4.3	17.
18	Thos. D.	18 "	5 5	32 "	3.11	4.	4.6	3.11	16.4
19	George J.	19 "	5 9	35 "	4.6	4.6	5.	4.4	18.4
20	Caleb H.	38 "	5 5	34½ "	4.5	4.2	5.2	4.3	18.
21	John R.	50 "	5 6	34 "	4.6	4.	4.6	3.10	16.10
22	John A.	43 "	5 6	35½ "	4.10	3.11	5.4	4.	18.1
23	Peter H.	33 "	5 8	34 "	4.6	4.	5.	3.11	17.5
24	Mich'l Mc.	24 "	5 9	33½ "	4.3	3.11	4.6	3.10	16.6
	Average,				4.1	4.+	4.7	4.1+	16.9

Now, a comparison of the mean diameters, as found in these two tables, will give us for the

	Vert. Diam.	Trans. Diam.	R. Obl.	L. Obl.	Total.
Post-mortem measurement of 12 hearts,	4.	4.4	4.10	3.10	17.
Measurement during life by aus'y perc'n, of 12 hearts, ...	4.3	4.1	4.8	4.1	
Do. - - - of other 12 hearts, ...	3.11	3.11	4.5½	4.1	
Do. - - - of 24 hearts,	4.1	4.+	4.7	4.1+	16.9+

So far we think the showing must be satisfactory, and we now turn to the female heart. Of these we have but eight in each class. In all the cases in the first of the following tables, as well as in those of table No. 2, the hearts were measured *in situ*, before any organ of the body had been removed or examined. They were exposed by removing the anterior portion of the thoracic walls, and laying aside the lung and pericardium, with the least possible disturbance in the relation of parts.

TABLE IV.

Showing the dimensions of eight female hearts, by post-mortem measurement.

No.	Name	Age.	Stature.		Girth of	DIAMETERS.					Cause of death, and
		yrs.	ft.	in.	Chest.	Vert.	Trans.	R. obl.	L. obl.	Total.	condition of the heart.
1	Ann L.	31	5	1	30 in.	3.3	4.	4.6	3.6	15.3	Puerp. fever — a moderate quantity of blood in each cavity.
2	Mary H.	29	5		31	3.7	4.6	5.	3.5	16.6	Puerp. fever; all cavities full, not forcibly distended; apex raised
3	Mary H.	25	5	1	30	3.6	4.10	4.7	3.6	16.5	Puerp. fever; all cavities filled; apex elevated.
4	Em. C.	26	4	11	29	3.9	3.7	4.7	3.7	15.6	Puerp. fever; all cavities filled, not forcibly distended; heart more oblique than used.
5	Fanny R	20	4	10	30	3.3	4.2	4.7	3.6	15.6	Fever; right cavities filled; apex elevated.
6	Ann R.	64	5	2	30½	3.10	4.	4.9	4.	16.7	Pneum.; right cavities filled.
7	Susan S.	24	5	3	31½	3.6	4.1	4.6	3.6	15.7	Phthisis; some blood in each cavity.
8	Jane C.	20	5	2	34	4.1	3.11	4.2	3.7	16.3	Apoplexy; heart entirely and firmly contracted; position less oblique than usual.
			Average,....			3.7	4.1½	4.10	3.7	16.1+	

From this, it will be seen that the female heart is smaller than that of the male, in all its dimensions; the comparison giving us as has now been shown,

For the male heart, vert. diam. 4; Trans. 4.4; R. obl. 4.10+; L. obl. 3.10.
" female " " 3.7; " 4.1½; " 4.10; " 3.7.

Hence the necessity of collecting them into separate estimates; and of comparing the organ in each sex, to the exclusion of all measurements from the other. We have therefore prepared a fifth table to be the counterpart of that just given, showing the dimensions of eight female hearts, taken in the living body by auscultatory percussion. Hearts showing any evidence of disease have been excluded; in other respects, the cases have not been selected. Whatever of correspondence exists in age and size, therefore, is accidental, — whatever in the diameters of the heart, is necessary.

TABLE V.

No.	Name.	Age.	Stature.		Girth of Chest.	DIAMETER.				
		yrs.	ft.	in.		Vert.	Trans.	R. obl.	L. obl.	Total.
1	Jane Mc.	28	5	2	32 in.	3.10	4.2	4.9	3.6	16.3
2	Mary H.	33	5	3½	32	4.	4.3	5.	3.9	17
3	Marg't M.	24	5		30	3.9	4.	4.6	3.6	15.9
4	Agnes M.	62	5	2	32½	3.10	4.1	5.	3.10	16.9
5	Ann S.	60	5	2	33	3.10	4.	4.9	3.6	16.1
6	Jane M.	20	4	10	27	3.6	3.8	4.4	3.4	14.10
7	Mary Mc.	30	5		29½	3.9	3.10	4.9	3.6	15.10
8	Mary N.	40	5	7	32	3.10	4.	4.6	3.9	16.1
			Average,......			3.9	4	4.8½	3.7	16.1.–

Thus, then, we find for the female heart, after death,	3.7; 4.1½; 4.10; 3.7=16.+
And for the measurement by aus'y percussion, during life,	3.9; 4; 4.8½; 3.7=16.1–

Such, if our estimates be correct, are the results of comparison. The average aggregate of the four diameters in men, by auscultatory measurement, falls less than three lines short of that derived from measurement by inspection; in women less than one line. We claim, then, to have demonstrated the possibility of measuring the human heart within the thoracic walls, with hardly less exactness than if it were exposed before us; and it will not we hope invalidate our conclusions, that we have been compelled to establish for ourselves a standard of measurement, before our results could be tested. The heart has indeed been most satisfactorily measured for all purposes of post-mortem investigation; but we know of no attempt to show what are its dimensions in healthy action. These we have sought at the only source of knowledge open to us. Our facts are too few for large and accurate generalization, but they are numerous enough to secure us from material errors.

We have now reached a point where a new and important question arises; and though to answer it forms no part of our main design, we shall perhaps be indulged if we turn aside to it for a moment, with the facts we have now in hand. If auscultatory percussion can teach us to measure with accuracy the dimensions of the heart in the living body, before it can be practically useful, it must give us not only the measurements of the healthy heart, but also the maximum dimensions compatible with health. What then are the diameters that indicate disease? When it is remembered that we are on ground hitherto unexplored, without authority to appeal to, or a single fact to guide us but those of our own collecting; and such as we have gathered without particular reference to this subject, are too few to be relied on in generalization, we need not say that we must answer with hesitation. Rather we will decline to give a final answer, while we attempt to point out the bearing of the facts we possess on the inquiry.

The number of measurements to which we can refer, are 62; 10 of which will be classed as diseased; and the heads, under which the others fall, may be seen by reference to the foregoing tables. Here we shall have little use for the several mean diameters of these tables. Our whole reliance must be on the aggregates. For should it be established, that four inches and one line is the vertical diameter of a standard heart, we find that a heart one inch less, or half an inch more, may still be healthy. And the same will be found true of each other diameter. The deficiencies of one diameter are compensated by increased extent in others. In explanation of this fact, we refer to the anatomy of the organ. Either one, or even all its proportions, may vary from an average, and yet the weight and total of diameters conform to those of a standard heart. Again the obliquity of the heart compared with the median line of the body, often varies considerably. We have seen our vertical line fall from the base to the apex, on the one hand, and from the base almost to the origin of right ventricle, on the other. Now in such cases the total of the diameters may vary but little.

Recurring, then, to the aggregates, and examining first the male heart, we have in one table, a mean agregate of $16\frac{9}{12}$ inches; in another, 17 inches. We will assume the higher of these numbers, as the most convenient, and perhaps the most accurate. Now the minimum of these tables is $14\frac{11}{12}$, in the dead body; and $15\frac{8}{12}$ in the living; while the maximum is $18\frac{4}{12}$, furnished by two bodies; or for the living $18\frac{4}{12}$. We prefer the latter of these two numbers, as the 18$\frac{10}{12}$ inches in both cases, resulted from passive engorgement of the heart. These are the aggregates of health, and the following table will show us what we may look for in disease. It embraces ten cases that were excluded from the preceding estimates, as diseased, or of questionable soundness.

TABLE VI.

No.		Age. yrs.	Stature. ft. in.	Girth of Chest.	DIAMETER. Vert.	Trans.	R. obl.	L. obl.	Total	REMARKS.
1	Enlargement questionable during life.	28	5 7	33 in.	4.3	4.3	4.1	4.	16.7	Slight murmur with 1st sound; increased impulse? rythm normal.
2		42	5 5	32½	4.	4.6	4.5	4.3	17.2	Slight roughness of 1st sound; no increased impulse.
3	Enlargement unquestionable during life.	58	5 10	37	4.6	4.10	5.	4.4	18.8	Action irregular; rythm lost; 1st sound nearly undistinguishable.
4		32	5 8	36	4.8	5.	4.10	4.10	19.4	Action irregular; murmur with first sound; puls'n of jugulars.
5		52	5 4	33	6.	6.5	6.7	5.	24	Rythm lost; impulse increased, and over a large space.
6	Enlargement, found after death.	64	5 2	30½	4.1	4.6	5.7	3.7	17.9	Female; died of arachnitis; concent'c hyper'y of l. vent.; walls of v. at three points, 7.8 and 10+ lines; septum 6.8 and 6 lines.
7		26	5 2	31	5.	3.11	4.9	4.4	18	Female; died of puerp. fever; disease of tricuspid valve; some hyper'y, and slight dilat'n of vents
8		26	5 6	34	4.6	4.6	5.9	4.3	19	Death of erysipelas; hyper'y with dilat'n of left vent; marked hyper'y of right auricle.
9		64	5 8	35	4.6	5.	5.9	5.	20.3	Marked hyper'y and dilatation of all the cavities except right auricle.
10		60	5 5	33½	4.6	6.9	6.9	5.6	23.6	Great dilat'n of vents and some hyper'y of right; dilat'n of right auricle.

Rejecting the first two cases, as affording very doubtful evidence of enlargement, whether examined by the rational or physical signs, we find in a large man 58 years of age, signs of dilatation, with $18\frac{3}{12}$ for total of diameters; or four lines more than the maximum of the healthy heart in life, derived from a smaller man. The smallest male heart, found enlarged after death, gives us an aggregate of 19 inches. We then arrive at the following conclusions, viz. 1st, That a male heart whose aggregate diameters exceed 17 inches, must be considered a large heart. 2d, Less than 17, and in a person of mean size, there could be little chance of enlargement. 3d, If the agregate equal $18\frac{8}{12}$, even judging most favourably, the chances of disease are 11 in 12. And 4th, Though a total of 19 inches is a sure indication of enlargement, one of 24 inches is not incompatible with life.

We pass now to the tables that relate to the other sex. We are required, suppose, to decide whether in a given case increased energy in the action of the heart depends on sympathetic influences, or on hypertrophy of that organ. We have seen that the average aggregate for 16 female hearts, is $16\frac{1}{12}$ inches. Then, in one half the number of cases of increased impulse from sympathetic action merely, the total diameters of the heart will be $16\frac{1}{12}$, or within it. But suppose in the case in question, the aggregate exceeds this number. 17 inches is the maximum of 16 healthy hearts, and $17\frac{9}{12}$ is found, in table VI. to indicate marked hypertrophy. If then the aggregate in such a doubtful case exceed 17 inches, the presumption is in favour of organic disease; if it equal $17\frac{9}{12}$, the probabilities are fast approaching certainty. But as we have said, our data are insufficient to enable us to fix numbers in any such estimate with certainty. We may find it convenient to resume the subject with more material at no very distant day.

Here, for the present, will we rest the whole matter. We have attempted to base a new mode of exploration for certain purposes of medical and surgical diagnosis, on philosophical principles; we have pointed out certain conditions, parts and organs, to which these principles of diagnosis are applicable. We have spoken of their relations to many of the tissues of the body: we have shown that they may be usefully applied to certain dislocations and diseases of joints, and to fractures of bones, and have conjectured their further utility to practical surgery; we have declared them competent to the mensuration of all solid or consolidated organs or products, within the thoracic or abdominal cavities, which lie in contact with the walls of such cavity; limiting them, or distinguishing them from fluids, &c.: and we have attempted to demonstrate, (with what success we submit, and crave pardon if with too wearisome detail,) their eminent usefulness in the study of the heart,—and we are prepared to show, though less completely than we hope to do at a future day, the results which may be expected from their application to the study of the spleen, the liver, and the kidneys. Yet with all this, we believe the capabilities of these principles and this method, are not exhausted; for may we not infer from what has been said in the early part of this essay, that they may be as applicable to the diagnosis of the nature and connections of abdominal tumours as to that of organic intumescence;—applicable to hypertrophy of the thymus gland, in the rare cases of thymic asthma; to ovarian dropsy, distinguishing the size of individual cysts; to uterine disease, distinguishing all solid tumours within it and hypertrophy of its substance, from pregnancy? May we not even discover and fix the *tone* of healthy tissues and organs; for example of bone, of the heart, of the liver, &c.; and by the cultivation of a musical ear be able to recognize in deviations from healthy tone; deviations from healthy condition? This last suggestion is not now made for the first time; but the mode of study we propose offers new facilities for its accomplishment. We have found it practicable to reduce the notes of different organs to the diatonic scale. Since the pitch of sound varies with mechanical resistance in the body producing it, in the same manner as conductibility varies with density; and since in certain forms of disease, organs deviate materially from healthy firmness; the tone and conducting power, not to speak of other qualities of such diseased organs, must of necessity be changed, whether or not the ear can analyze and appreciate the difference.

In conclusion, we ask for auscultatory percussion, a patient and impartial trial. We have nowhere said that it is easy of acquisition. Its successful study presupposes an acquaintance with many of the laws of acoustics. The ear will require practice to analyze and distinguish particular sounds. And some little act may be requisite to enable the observer to listen and percuss at the same time. Yet if we have claimed for our method no more than future observation will justify, it will surely recompense the time and industry needful for acquiring it. But its sphere of application may be even larger than we have anticipated, for when a set of principles are established, they generally admit of an expansion and adaptation much beyond what was at first supposed. Should, however, the claim to extend the domain of diagnostic art be denied to it, to suppose the least, it will still materially aid us in occupying the territory already conquered — for, says Dr. Stokes, "The greater the number of physical signs which can be combined in any particular case, the more accurate will be our conclusions." If we have been so fortunate as to attract the attention and secure the co-operation of those who are favourably situated for the prosecution of these investigations, our object has been attained.

HOSPITAL REPORTS.

Report of Cases of Puerperal Fever occurring at the New-York Alms-House. By Alexander F. Vaché, M. D., Resident Physician.

In giving a history of the puerperal fever, in the Alms-house establishments at Bellevue and Blackwell's Island, I shall not attempt any speculations on the cause, character, or nature of the disease; but confine myself to a detail of the symptoms, treatment, termination, and post-mortem appearances, when fatal, of the several cases, leaving it to others to draw whatever inferences and conclusions the facts may seem to justify. It may not be uninteresting, however, to state that the disease made its appearance in the Alms-house on the 12th January, 1840, and was quickly followed by two more cases, apparently so malignant, that it was immediately determined to vacate the room, with a view to its purification. The inmates were accordingly removed, and the apartment was whitewashed, ventilated, and scrubbed; the bedsteads were cleansed, new beds and bedding introduced, and at the expiration of about a week, it was considered sufficiently disinfected to return to it in safety. But the disease immediately re-appeared, equally as violent and irremediable as before, and it was concluded most judicious to abandon the building. As promptly as it could be accomplished, another, some distance from the Alms-house, and appropriated for a nursery, was put in the most perfect order: the bedsteads were cleansed and painted; new beds and bedding were furnished; the physician and nurse were changed; the pregnant women were directed to cleanse their persons by bathing; new clothes, even shoes, were given to them, immediately previous to transferring them to their new habitation, and all intercourse arrested with the inmates of the surrounding premises. Notwithstanding these precautions, the first woman confined, and subsequently four others in succession out of five labours, were attacked with the disease, and in every case it was fatal. As a further effort in the cause of human life, and as the only rational means of arresting this terrible scourge, was the total abandonment of the lying-in establishment at Bellevue.* Apartments in the "middle house" of the Lunatic Asylum on Blackwell's Island were appropriated to that use. The same care was observed in relation to the *enciente* as heretofore observed, and every other means resorted to that promised the least chance of success. For a time, the change of air, free ventilation, and a more generous diet, seemed to have accomplished the object; several were delivered, convalesced, recovered, and were discharged, without an untoward symptom; but, as subsequently ascertained, the disease was merely suspended, not eradicated; for it here appeared with equal, if not redoubled fury, attacking almost every woman confined, and setting at defiance every effort for their recovery. It there still continues, and the result shall be hereafter reported to the profession.

The number of women confined in the institution from the appearance of the disease to the present time were, in the Alms-house, eighteen, nine of whom were attacked with the fever, seven died, and two recovered; in the nursery, six, five of whom had the fever, and five died; in the "Black Alms-house," twelve, four of whom had the fever, and four died; and on Blackwell's Island, twenty-three, six of whom had the fever, three died, and three are yet living. Besides these, there were several others delivered in various rooms of the establishment, all of whom escaped.

The treatment, it will be observed, has been diversified: resisting at the commencement that usually adopted in puerperal peritonitis, the extreme malignity and fatality of the type, justified the trial of the various remedies alleged to have been curative by the most distinguished accoucheurs in the world. As yet, they have been in a great measure unsuccessful: perhaps it may be explained by the opinion of Tenon, "that there are two species of puerperal fever—one simple and curative, the other complicated and rebellious, which it is impossible to relieve."

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* The disease had also appeared in another building, known as the "Black Alms-house," appropriated to people of colour.

It gives me great pleasure to express my obligations to the estimable and talented assistant physicians of the institution, Drs. Davenport, Osborn, McClelland, and Cock, for the fidelity and zeal with which they performed their arduous duties, and for their benevolence and attention to the unfortunate victims of this appalling disease. To them I am also indebted for the history of the cases, from their very accurate notes.

Case I.—Attacked on the fifth day after delivery. Treatment, C. C. to abdomen; opiates. Death on the third day. Peritonitis with effusion.

Catherine McCarthy, aged 24 years, was delivered of her third child in the lying-in ward of the Alms-house on the evening of the 13th of January. About 9 P. M., January 17th, she was seized with a chill; an hour after found her breathing with a laborious catching respiration, as if a full inspiration gave excessive pain, which she referred to the point of the sternum. The abdomen was but little sensible to pressure; the pulse was quick and small. A dozen cups over the seat of pain afforded immediate relief. In half an hour the symptoms returned with the same violence as before; but the pain was now referred to the right hypochondriac region. The cups were repeated, and again gave temporary relief; antispasmodic medicines were given her.

Jan. 18th. Has passed a restless night; pain and difficulty of breathing the same as last evening; erythematous patches on various parts of the body, particularly between the fingers; this day's treatment not recollected.

Jan. 19th, 9 A. M. Pulse 120, small and frequent; tongue coated with a hard, dry, brown crust in the centre, white on the sides, and deep red at the edges; skin cold and moist; countenance anxious; patient constantly vomiting a dark green fluid; slight pain on pressure in the umbilical region; milk suppressed; lochiæ continued. Ordered one grain of opium with ten of Dover's powder every three hours, and hop fomentations to the abdomen.

11 A. M. Pulse smaller and more feeble; patient delirious, and still vomiting. Stimulants were freely given. She died at 5 P. M. having lived 44 hours from the supervention of the chill.

Post-mortem examination. The peritoneal cavity contained about a pint of sero-purulent fluid, with depositions of lymph in various parts, particularly between the folds of the intestines. The whole peritoneum was injected, particularly that covering the intestines.

The internal lining of the uterus was covered with a light red secretion, with an occasional dark patch.

The mucous lining of the stomach and intestines was natural. The liver was injected and softened. The gall-bladder was full, and its internal coat highly injected. All the thoracic viscera were natural.

Case II.—Attacked on the 3d day after delivery. Treatment V. S. calomel, opium. Death on 3d day. Peritonitis with effusion; inflammation of mucous membrane of stomach.*

Margaret McGill, aged 28, a healthy, well-formed Irish woman, was delivered of her 7th child in the lying-in ward of the Alms-house, after an easy labour of two hours' duration, on the evening of the 27th of January.

Twenty-four hours after, she experienced a slight chill and complained of wandering pains in the abdomen and back. These passed away after the exhibition of a Dover's powder; and on their recurrence the next evening, a similar prescription gave her a comfortable night. They returned on the morning of the 30th, and increased in severity until noon. She then had constant pain in the abdomen, particularly over the uterus, increased by pressure, with paroxysmal exacerbations occurring every fifteen or twenty minutes. The abdomen was tumid, the pulse exceedingly quick and small in volume, about 140. The tongue was coated with a thick white fur in the centre, but red and moist at the edges. Erythematous patches were seen on various parts of the body, one as large as the palm of the hand, situated just above the right wrist; another occupied the bridge of the nose. She was exceedingly restless. V. S. ad. ℥xvj; Magnes. Sulp. ℥ss. Calc. Magnes. ʒi.

3 P. M. Pulse slower and more full; has been vomiting a green bilious fluid. The pain in the abdomen continuing, two dozen leeches were applied, followed by poultices.

6 P. M. Pulse softer; feels much relieved. Ten grs. of calomel with two of opium were ordered at this time, and ten grs. of calomel with one of opium every two hours subsequently.

Jan. 31st, A. M. The pulse is more rapid, soft, and fluttering; tongue thickly coated with yellow fur; skin moist. The patient has but little pain or tenderness in the abdomen, but has passed a restless and uncomfortable night, and has vomited some gallons of the green fluid already alluded to. The symptoms were thought to be aggravated by the calomel and opium, and were discontinued after the administration of the second powder. At 1 P. M., however, that treatment was resumed, and 5 grs. of calomel with ¼ gr. of opium were ordered every four hours, with lotions of the oil of turpentine to the abdomen.

12 M. Pulse 132, soft and feeble; restlessness has been increasing since noon; complains of a diffused pain over the abdomen, breast, back, and right fore-arm.

Feb. 1st, 3 A. M. The pulse has fallen to 60, and is exceedingly feeble; the extremities are cold; the vomiting has remained unchecked. Alcoholic stimulants were freely given; but the patient died shortly after four o'clock, in the full possession of her reason, 3½ days after the commencement of the attack.

The lochiæ were free throughout.

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* Another fatal case occurred at this period, of which no record was kept.

The secretion of milk took place on the 3d day after labour, and disappeared in twenty-four hours.

Post-mortem examination. About a pint of sero-purulent fluid was found in the abdomen. The parietal peritoneum was highly injected in patches; the visceral to a less extent. The stomach contained a small quantity of the green fluid spoken of; its cardiac extremity was much inflamed. The upper part of the right lobe of the liver, and the spleen, were softened. The uterus was of natural size and appearance; the lungs and heart were also natural.

Case III.—Attacked on the second day after delivery. Treatment, leeches, fomentations, Dover's Powder. Cure.

Sarah Reed was delivered after a short and easy labour, on the 3d of February, of her fourth child, in the Alms-house. She is 30 years old; of regular habits, and of good constitution. The after pains, which lasted until the night of the 4th, left a soreness which has continued more or less to the present time, (February 5th,) wandering every where over the abdomen and back. The pulse is about 130 hard, but not voluminous; the tongue is slightly coated with white fur; the skin bathed in perspiration. The lochiæ were suspended last evening; the milk is not secreted. She now complains of much tenderness on pressure of the abdomen. C.C. xii. to abdomen.

Feb. 6th. The pain in the abdomen has mostly moved to the back and right side. She was cupped and 10 leeches applied, with warm fomentations. The cups, owing to the flabby state of the abdomen, drew very little blood.

7th. Pulse 120, hard and forcible; was relieved and slept last night; there is still some tenderness over the abdomen. Salts and magnesia,—warm fomentations.

9th. Pulse 110; anxiety increased; tenderness on pressure greater; 12 leeches applied.

12th. Pulse 96; tongue red at edges, but little coated; skin moist; slight soreness remaining over the uterus. About this time, the whole surface of the body was covered with a miliary eruption. Under the use of Dover's powder when pain or excitement existed, the patient slowly recovered.

The loch œ which ceased the day after her confinement, returned on the 11th. The milk was slightly secreted the 2nd day, and disappeared the same day. Three days after this it returned, but for a few days only.

Case IV.—Attacked the third day after delivery. Treatment V. S. leeches, fomentations, Dover's powder, &c. Apparent convalescence, interrupted by mortification of the cheek, diarrhœa, &c. Death on the 32d day. Numerous adhesions of the pelvic viscera; purulent deposition, &c. in the subperitoneal cellular tissue; obliteration of the iliac vein, &c.

Anna Dhal was delivered in the Alms-house of twins, Feb. 7th, at 11 P. M. after a somewhat severe labour of 12 hours. She is 18 years of age, of sanguine temperament and full form; her habits are good, and her appearance indicates the highest degree of health. In visiting the ward at 10 A. M. Feb. 9th, found her cheerful and comfortable.

4 P. M. An hour and a half since, 51 hours after delivery, she had a severe chill lasting 15 minutes. Pulse about 150, full and hard; tongue clean and glossy; the patient is restless and much excited, and there is great tenderness on pressing the abdomen. V. S. ℥ xvj; salts ℥ j., magnes. ʒj; and chamomile fomentations to the abdomen.

Half-past 7 P. M. Pulse 132, soft and compressible; less restlessness; considerable pain still in the abdomen. Directed xxv leeches, followed by poultices.

10th. 9 A. M. Pulse 128, full and hard; pain in the abdomen, immediately relieved by the application of the leeches; patient uneasy most of the night, but slept an hour or two towards morning; has had 5 or 6 evacuations from the bowels. Repeat V. S. ad ℥ xvj.; Two hours after blisters to the calves of the legs.

Half past 10 P. M. Pulse 124, full and bounding; restlessness; pain in the back and over the uterus. V. S. ℥ vj, which produced syncope; an hour after xxjj. leeches were applied to the abdomen.

11th. Half-past 2 A. M. Pulse 106, softer and more compressible. Patient easier.

5 P. M. Pulse 132, full, but compressible and irritable; complains again of pain in the back and abdomen; two natural evacuations from the bowels to-day. Pulv. Doveri, gr. xv.

12th. Half-past 1 A. M. She experienced relief soon after the administration of the opiate, and obtained some sleep, but she is again restless, and the pain in the abdomen and back has returned. ℞ pulv. Dov. gr. xii.

P. M. Pulse 130, full, but more irritable, giving a wiry sensation when lightly touched; slight dry cough; bowels not moved to-day. 5 grs. of Dover's powder every four hours; 15 grs. of calomel, immediately.

13th. 9 A. M. Pulse 120; tongue thickly coated with a white fur, but red at the edges; skin cool; slept uneasily a few hours; 5 or 6 evacuations from the bowels.

Half-past 5 P. M. Pulse 130, full, bounding and intermittent; complains of pain in the right fore arm, and back of the head, and less of the abdomen. 5 grs. of Dover's powder, with 2 grains of ipecac every third hour.

15th. 9 A. M. Pulse 116, soft and less voluminous; tongue cleaning; constant diarrhœa.

16th. 9 P. M. Pulse 130; tongue dry in the centre; more restless and complaining. Discontinued the powders, and ordered gr. xv. of Dover's powder.

17th. Half-past 3 P. M. Pulse irritable, quick and bounding; tongue covered in the centre with a dry black crust; stomach irritable; has just vomited a small quantity of green fluid. Calomel gr. x.

Half-past 10 P. M. The vomiting continues slightly, the calomel was repeated in two hours, and this seemed to check it. She seems worse; is restless;

pulse irritable and irregular; tongue presents a dry scorched appearance. x grs. of Dover's powder with grs. jss. of opium given.

18th. 9 A. M. Pulse 120, tongue moister; patient looks better; 2 grs. of ipecac, with 5 grs. of Dover's powder every three hours; and x grs. of Dover's powder with 1½ grs. of opium at night.

From this time the patient for a while gradually but slowly improved. The tongue cleaned, but the pulse remained constantly irritable and much accelerated. The diarrhœa which was occasionally present, ceased about the 25th. The Dover's powder with ipecac, was used for a day or two only, but the opiates at night were continued.

About the 25th, the gums became sore, and an abscess formed in the left cheek, which was opened from the inside. This took on a sloughing character, and continued to extend in spite of the usual remedies, yeast poultices, sumach gargles, &c., till it had passed entirely through the cheek, destroying it to the size of a dollar. For a week previous to death, her hearing was impaired, her sleep disturbed, and subsultus tendinum took place; the pulse was 135, irritable but full. A few days before death, diarrhœa set in. Tonics were given, but the patient died March 13th—32 days after the attack.

The lochiæ were natural and abundant throughout. The milk was slightly secreted the day after her attack; it ceased the same day, reappeared on some amendment of the symptoms taking place, but continued for a few days only.

Post-mortem Examination 20 hours after death.—Externally, and on examining the cavity of the mouth, a circular slough was seen on the left cheek about two and a half inches in diameter, situated about half an inch from the angle of the mouth; this extended through the entire cheek, and though the line of demarcation had formed, the slough had not yet separated. The cellular and other tissues except the dermoid, over the whole cheek, and extending high up the temporal fossa, were infiltrated with pus, and in a sloughing condition. The left half of the soft palate was also involved in the disease, and sloughing. The lower jaw-bone of that side, was denuded on its anterior and posterior surfaces, from the articulation to within an inch of the symphysis; the alveoli were carious, and pus was seen in the cancellæ of the bone. The tongue was swollen, and on the left side, slightly ulcerated. On the abdomen some of the old leech bites still showed black ecchymoses, in the centres of which were found small quantities of dirty fœtid pus tinged with blood.

Head.—The membranes on the right side of the head were highly injected, and about ℥ ij of serum was left in the skull on removing the brain.

Chest.—The heart was considerably enlarged, the vessels here as generally throughout the body, both veins and arteries, were perfectly natural. The posterior and inferior part of both lungs were somewhat consolidated, but not absolutely hepatized. The trachea and bronchi were somewhat injected and contained much mucus. The bronchial glands were enlarged, and one of them contained a deposit like a grain of sand.

Abdomen.—The peritoneum both of the parieties and of the intestines, was generally healthy; slight vascularity was however observed in one or two places, as on the commencement of the descending colon, at its sigmoid flexure, and on the peritoneum of the pelvis. At the sigmoid flexure of the colon, one or two bands of lymph passed across the peritoneum. The vermiform process, the right ovary, fallopian tube, and right border of the uterus, were firmly united to each other, and to the peritoneum on the right edge of the upper strait of the pelvis, over the track of the femoral vessels, by vascular adhesions; and the uterus was considerably drawn to the right side. The uterus was attached posteriorly to the sacrum by adhesions of a dark lead colour. Anteriorly, the peritoneum was separated from the walls of the abdomen by an abscess, four inches in diameter, containing pus, and in cutting up the adhesions on the right side, one or two drachms of pus was discharged from a kind of cyst. On further examination, the whole sub-peritoneal cellular tissue of the pelvis extending to within a half an inch of the kidney, and to a considerable extent the adipose tissue had degenerated into a singular kind of shreddy matter, resembling lint soaked in pus;* layers of it could be seen lying in contact with and traversing the fatty tissue; which when drawn out by the forceps left winding sinuses. The quantity of this morbid product could not have been less in weight than one and a half pounds. The cavity of the pelvis contained one or two drachms of clear yellowish serum.

Stomach and Intestines.—The stomach contained a dark coloured fluid. On the cardiac half a large meshwork of dark brown lines was noticed under the mucous membrane, which was however healthy, as also the other portions. The mucous membrane of the intestines was pale and bloodless; these organs contained a considerable quantity of dirty green fluid.

Uterus and Appendages.—The uterus was of a pale lead colour; when cut into, the middle and inner portions of the walls, were of a grayish tint, dotted with dark points becoming more numerous imternally. The neck was ecchymosed. The cavity at the fundus was covered by a dark ash-coloured flocculent matter, firmly adhering to the organ. In the centre of this was a mass half an inch or more in diameter, resembling, in appearance only, softened tubercles, dipping into the substance of the organ by numerous roots. The body of the uterus was covered by a thick glairy mucus, coloured red, easily scraped off; it then presented an uneven whitish secretion resembling lymph, firmly adherent to the organ, under which when scraped off, the mouths of numerous vessels could be seen. The neck was also coverėd by a glairy mucus, nearly colourless. In the vessels of the uterus, with the exception of some solid clots moulded to them, nothing abnormal could be discovered on close examination.

Under the peritoneal covering on every side were numerous deposits of the purulent matter already described, some softer, some dry; also throughout the cellular tissue of the broad ligaments, ovaries, and neck of the uterus.

The right fallopian tube was enlarged and sacculated, and filled with a thick creamy pus in its outer ⅔ds.

The left fallopian tube contained a few drops of pus, and the uterine orifice was plugged up by a clot of fibrin. The right ovary was enlarged and pale.

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* Might not this appearance have been caused by *sphacelation* of the sub-peritoneum cellular tissue? EDITOR.

The left was larger than the right, vascular—and had a deposit of lymph in its substance as large as a bean.

In the *left internal iliac vein* was found a firm clot filling the entire vessel so as to stop the circulation in it, projecting into the common iliac of the same side and extending downward through the gluteal, ischiatic, and obturator, branches, as far as they could be followed from within. This plug could be dissected in cellular layers, and at several points near the centre of the cylinder were small collections of pus. The ramifications of this clot did not enter at any point the vessels of the uterus. The other organs were examined, but nothing worthy of note discovered.

Case V.—Attacked the 3d day after delivery. Treatment V. S. fomentations, purgatives, Dover's powder. Death in 33 hours. Peritonitis, especially on the small intestines and uterus; acute inflammation of mucous membrane of stomach and small intestines.

ANN COYLE, aged about 25, was delivered in the Alms-house of her 3d child, at 5 P. M., Feb. 13th, after a severe labour of 10 hours.

Feb. 15th, 2 A. M., 33 hours after delivery. The patient had experienced a slight shivering in the early part of the evening.

Found her very restless, lying on her back in preference to either side, which gave much pain; the pulse is 120, small, hard, and irritable; the tongue has a dry, brown strip through the centre. The abdomen is tense and tympanitic, and she complains of severe and constant pain in it, especially over the uterus, aggravated by pressure, and appears complicated by after-pains, followed by a discharge of clots from the vagina, at intervals of about 15 or 20 minutes. She had taken a purgative in the afternoon, which has not yet operated. Large injection of castor oil and oil of turpentine; chamomile fomentations; soon after, V. S. ℥xii.

8 P. M. Pulse 142. Has not the least tenderness over the abdomen; is in good spirits, and will not acknowledge pain, or that any thing is the matter with her. She took gr. xii. of Dover's powder. Soon after this she became restless and delirious, and remained so until within an hour or two of death.

11½ P. M. The pulse is fluttering, small, and rapid. Laudanum ʒi in a pint of porter was ordered, about half of which only could she be induced to swallow. It had no effect on the pulse; and as she continued to sink, alcoholic stimulants were freely given. She died at 3 A. M., (16th,) about 33 hours after the attack.

Post-mortem examination. About a pint of straw-coloured serum was found in the abdominal cavity. The parietal peritoneum was somewhat injected; the peritoneal coat of the small intestines highly inflamed; and that of the large intestines in a less degree. The mucous lining of the stomach was slightly inflamed at its smaller curvature; near the cardiac orifice, at its greater curvature, was seen a large and intensely inflamed patch, interspersed with very small black gangrenous ulcers. The stomach contained about ℥iv of fluid resembling the grounds of chocolate. The mucous coat of the small intestines was much softened and inflamed; that of the large slightly so. The large intestines were distended by flatus; the small intestines contained a large quantity of a dark brown, thick, turbid fluid. The uterus was of natural size. Its peritoneal coat was highly injected; its interior appeared natural, with the exception of its mouth and neck, which were of a blackened colour.

The iliac veins were not inflamed.

The liver was slightly softened in its greater lobe.

Case VI.—Attacked on the 19th day. Treatment, V. S., leeches, fomentations, turpentine injections, calomel and opium. Cure.

Mary Ann Flynn, born in Ireland, æt. 18 years, was delivered of her first child after an easy labour, on the 13th Feb. in the Alms-house. With the exception of a profuse lochial discharge, for the last fortnight, which ceased almost entirely a day or two since, after the administration of some saline purgatives, she remained well till 4 P. M. yesterday, (19 days after delivery,) when she was suddenly seized with severe pain in the abdomen and back. This continued to increase till 4 A. M., March 4th, when a distinct chill occurred; pulse 120, small and feeble; complains of very severe pain in the abdomen and back, not materially affected by pressure; tongue natural; abdomen flaccid; vomited some fluid, which was not observed, just before she was seen; nursed her child as usual last night, but now the secretion of milk has entirely ceased. The bowels were not moved yesterday. She was ordered ℥ii of castor oil with ℥i of oil of turpentine in an enema, which brought away a considerable collection of scybalæ. In half an hour, having experienced no relief, she was bled ℥xiv; and xxvjjj leeches applied, followed by bran fomentations, and shortly after, ℈i of calomel with gr. ii of opium were given. The pulse did not appear to be affected by the loss of blood.

9 A. M. Pulse 122, still small and compressible; the tongue has a dry bright-red streak through the centre; there is great thirst. The abdomen is tympanitic; there has been considerable irritability of the stomach since the chill; she vomited soon after the administration of the powder, and once or twice the water taken into the stomach, when thrown off was stained with blood. Another enema of oil and turpentine was directed; x grs. of calomel with one of opium were given now, (soon after taking which, however, she vomited,) and 5 grs. of calomel with one of opium directed every three hours subsequently.

8 P. M. About noon sinapisms were applied to the breast and blisters to the thighs. She is now easy and comfortable, has no pain in the abdomen except on taking a deep inspiration, or on motion: the pulse is 84; the milk has returned to the left breast. Continue powders.

Feb. 5th, 4 A. M. Pulse 86; tongue slightly coated with a dark-green fur, red at its edges: the skin is cool; she lies on her back, and is groaning from excessive pain at the lower part of the abdomen, which is increased by pressure.

She has also severe pain in the small of her back, and headache. Continue powders. At 5 P. M. 1 gr. of opium additional was given.

7 P. M. Pulse 116, small; skin hot; slight hiccough; mouth sore; no pain in the abdomen, some in the back; less thirst; no milk yet in the right breast; bowels not open to-day. A 1 gr. pill of opium was ordered, and a sinapism to the right breast. At 9 o'clock she vomited some light-green fluid. At 11 the powders of calomel and opium were discontinued, and she was directed 5 grs. of Dover's powders every three hours.

Feb. 6th, M. Pulse 106, soft and natural; tongue thickly coated with a deep-green fur, but red at the edges; the skin is moist; there is milk in both breasts; she is unable to pass her water.

7½ P. M. During the afternoon the pulse was much accelerated, and she was attacked by violent cramps in the thighs and legs, which were relieved by mustard pediluvia. She has now some headache; the skin is cool and moist. The bowels being costive, xv grs. each of calomel and rhubarb were directed.

Feb. 7th, 9 A. M. Pulse 110; perspiring freely; has had headache all night; has pain in the hips, none elsewhere; the abdomen is flaccid; has a sense of suffocation on taking a full inspiration, from pain in the left side; the respiration is 32, abdominal and easy; she complains of occasional ringing in her ears, and of her feet and legs feeling cold. There is now no lochial discharge; she now passes her urine. The bowels not yet being opened, an injection of oil, &c., was ordered.

Feb. 8th. No evacuation having taken place yesterday afternoon, ℥iss of oil, followed by *an enema*, was directed, which operated once pretty freely. Another dose of oil was ordered.

The pulse is 114, small; the skin is moist; there is some little pain in the lumbar region and head only. The Dover's powder was discontinued, and small doses of seidlitz powders given every two or three hours. Her nights are restless. Directed grs. x of Dover's powder with one of opium, at bed-time.

She was severely salivated, but she slowly but gradually recovered, under the use of porter, generous diet, &c. She has remained in the Hospital till the present time; her health has been very delicate, and she has been much subjected to menorrhagia; but her health is now permanently re-established.

Case VII.—Attacked on the second day after delivery.—Treatment, V. S. followed by a full opiate; leeches, calomel and opium. Death on the fourth day. Congestion of brain; peritonitis with sero-purulent effusion; deposition of pus in the sub-peritoneal cellular tissue of the pelvis; inflammation of mucous membrane of stomach and of uterus.

Mary McDevitt, aged 28, was delivered in the Alms-house of her fourth child, after a labour of six or eight hours, at 9 P. M. Feb. 17th. She was a woman of nervous temperament, and of delicate health, and at the latter stage of labour fell into a series of fainting fits, which terminated with the expulsion of the child.

Feb. 19th. 1 A. M., 28 hours after delivery, found her in an exceedingly severe rigor, which she described as coming upon her with great rapidity, and which lasted about half an hour. An intense headache, an affection to which she is much disposed, accompanied it, and she also complained of pain passing down the thighs; but of none in the abdomen, nor was it unusually sensible to pressure. The lochiæ are nearly suppressed; the milk is not yet secreted. Towards the close of the rigor, bled her ℥ xxii. The bowels had been freely opened by medicine a few hours before. In half an hour after the venesection, the pulse was 114, hard and somewhat full, and the head easier. She was ordered two grains of opium.

8 A. M. Pulse 100, soft and not very full; tongue clean; thirst excessive; the patient groans and complains of her head, and says that there alone she experienced pain; will not admit the existence of pain in the abdomen, though motion appears to trouble her. The slight uneasiness in the abdomen that she is willing to admit on further questioning, she says comes and goes like afterpains, and seems somewhat aggravated by pressure. She has dozed some since the last report, but has obtained no sound sleep. She was cupped on the temples.

12 M. Pulse 138, soft and compressible; no pain on pressing the abdomen; is very drowsy; can be aroused sufficiently to answer questions; her mind wanders, and when not disturbed she relapses into a state of stupor, with the eyes half closed. Erythematous spots upon the anterior part of the neck and right forearm, which fade at short intervals and sometimes disappear altogether.

8 P. M. She remains in the same state. One scruple of calomel was given her at 2 P. M., and ten grains were now ordered to be given every three hours.

Feb. 20th. Half-past 2 A. M. Pulse 112, rather soft and small. Is not so drowsy, but still delirious; complains of severe and constant pain in the abdomen, which is aggravated by pressure; complains also of her back and "feels tired." The lochiæ are diminished in quantity, and are of bloody colour. The milk slightly secreted yesterday, is stopped to-day; xxxij leeches were applied to the abdomen.

Half-past 10 A. M. The pulse became fuller after the bleeding from the leeches; the tongue is slightly coated; the patient has vomited about a pint of grass-green fluid; erythematous spots still seen; pupils sluggish.

Half-past 9 P. M. Pulse 126, soft and small; patient restless but rational, and thinks she is better; has been vomiting all day at short intervals, the green fluid which has now become of a darker colour. One grain of opium was given; soda water for drink.

Feb. 21st. Half-past 2 A. M. Pulse 102, fuller and stronger; patient still restless and has slept none; vomiting still continues; obliged to pass the catheter. Another grain of opium was administered.

Half-past 3 P. M. Some little volume to the pulse, which is very soft and compressible; abdomen tympanitic, complains of intense pain in the abdomen and back; and there is a good deal of tenderness over the stomach; xvi leeches were applied.

Half-past 7 P. M. Sensible, groaning, and in great pain; lies on the back, with the knees flexed; has vomited a considerable quantity of bright blood since noon. From this time she gradually sank, again became delirious a few hours before death, and died at 1 P. M. Feb. 22d, three and a half days after she was attacked. The calomel was continued up to last evening.

Post-mortem Examination, 48 hours after death.

Head.—The arachnoid membrane was not apparently inflamed, but the pia mater was intensely injected; and the substance of the brain when cut into was immediately reddened by countless bloody points. The vessels were large and numerous on the floor and roof of the ventricles.

Chest.—Both sides of the heart contained clots; the lining membrane was of a dark red or purple throughout, but otherwise healthy, and this extended down the veins to the iliacs growing less intense; the aorta had assumed the same colour; (in both probably to be attributed to post-mortem change.) The lungs were congested.

Abdomen.—The peritoneum generally was considerably injected. It was softened, thickened, and could be torn up from the cellular tissue of the intestines in strips, in which vessels could be seen when held up to the light. The cavity of the abdomen contained about a pint of sero-purulent fluid, in parts coloured red, but generally of a light cream colour. In the cellular tissue between the uterus and bladder, about a half gill of clear pus was found; the liver and diaphragm was also bathed in pus.

The stomach and intestines were much distended by gas. The stomach at its cardiac half was one mass of deep injection, among which some small gangrenous ulcers of the length of a line could be seen. The other half was of a dirty pale-yellow colour, not injected, but thickened and softened. It contained a small quantity of dark fluid. The intestines also contained a considerable quantity of grass-green fluid, but little or no fœces.

The *Liver* was softened.

Uterus.—The serous surface was bathed in pus. At the fundus, and for two and a half or three inches downwards, the inner lining was of a brownish red; it was no where clean, but partly covered with fibrous shreds and partly by irregular lumps appearing like fragments of the placenta. The portion below extending to the neck, was covered by a shreddy matter, a part purplish, but the greater part of a dirty yellowish white, resembling lymph tinged by the discharges; this layer was not thick, but pretty uniform. The neck was glistening, irregular or lumpy, œdematous, of a purple colour; and this was more intense on the elevations which were from 1 to 5 lines thick.

The vessels of the uterus near the fundus and in the body of the organ were natural, those near the neck were of a dark red colour, none of them contained pus. The fallopian tubes were congested, and of a purple colour; the ovaries were healthy.

Case VIII. — Attacked on the second day after delivery.— Treatment, V. S. leeches, calomel, opium, Dover's powder. Death on the second day. Peritonitis with effusion; Inflammation of the mucous membrane of Stomach. Inflammation of the lining membrane of Uterus. Congestion of brain.

Ann Lawlis aged 28, a stout and healthy Irishwoman, was delivered in the Alms-house of her first child, Sunday 23d Feb. at 3 A. M., after an exceedingly severe labour of 56 hours. On Saturday evening, the head was engaged in the superior straight, and although the contractions of the uterus were considerable, it was making no advance. The presentation was natural, but the bones of the head was firmly compressed, and the contraction of the pelvis gave but little hope of a natural termination to the labour. The contractions of the uterus soon after became partial and inefficient, and eighty drops of laudanum were administered. She slept well and vigourous pains returned on Sunday morning. Sunday afternoon the pulsations of the fœtal heart which had been distinctly heard the previous afternoon being absent, the head being only jammed more tightly in the pelvis, without making any real progress, the pulse growing small and rapid, hiccough and green vomiting taking place, the head was opened, and the child extracted by the crotchet.

Monday morning, Feb. 24th. Found the patient with a quick small hard pulse, abdomen tympanitic; complaining of acute pain on the least pressure over the right, and a slighter degree of it over the left iliac region, and just below the umbilicus. ℈j of calomel was given, a dozen leeches were applied, and she was an hour or two after, bled ℥ xiv.

1 P. M. The pulse which became fuller after the bleeding, has now become small and frequent; one and a half grains of opium were ordered, and every three hours subsequently five grains of Dover's powder.

Feb. 25th. Pulse 150; two or three green watery evacuations from the bowels since last report.

4 P. M. Up to this time she has been lying in a half sleepy state, free from pain. I now find her groaning from excessive pain, and complaining bitterly of her back. The pulse is very small and quick: hiccough, which commenced before delivery, still attends her; but the green vomiting has not occurred since. She died at half-past 8 P. M.

The discharge from the uterus continued, but was slimy, and bloody, and very fœtid. The milk was not secreted. No erythematous eruption was seen.

Post-mortem Examination 16 hours after death.

Head.—The scalp bled much more than usual when cut into; dura mater unusually adherent to the skull; membranes of the brain much injected; bright injection of the pia mater at the base of the brain; vessels of the lateral ventricles numerous and full.

Thorax and vessels.—Lungs healthy; pleuræ on both sides much injected; a few ounces of clear serum only in the cavities. The pericardium externally was much inflamed; the cardiac portion was not inflamed, but there was an effusion of four or five ounces of clear serum. *Heart.*—A clot was found in the right auricle, another in the left auricle, extending into the left ventricle; the right auricle was empty. The left auricle and valve were of natural colour; the right was of a dull red colour, which grew less intense to the iliac bifurcation; here it increased in intensity to the branches of the uterine veins, and disappeared as these subdivided. Pus was carefully sought for, but no where found. On the blood in the veins were floating minute particles of what appeared oily matter. The veins of the arm were no where reddened. The arteries were in a natural state.

Abdomen.—This cavity contained about a pint of dirty cream coloured puriform fluid, with shreds of lymph floating in it. The peritoneum generally was decidedly injected, particularly where it passes over the liver, kidneys, uterus, and over the small intestines, and here the injection was most intense where the convolutions meet each other, and lymph was here effused; the diaphragm was also highly inflamed and coated with a thick layer of lymph. No gas escaped from the cavity of the peritoneum, though the stomach and intestines were distended by it. The stomach contained nearly a quart of a dark green fluid; the intestines, a considerable quantity of a lighter colour. The stomach presented a dark inflamed spot, three or four inches square, near its cardiac orifice; the pyloric portion was mammillated. The small intestines presented some injection on their mucous surface.

Uterus.—The walls when cut into were of a rose colour; the vessels gave no evidence of inflammation, and no pus was found in them; the large veins near the neck and those of the posterior portion, were however, somewhat red. Internally, the uterus presented a singular appearance; near the fundus were the remains of a placenta, apparently but little altered in structure. Below was seen a dark shreddy secretion, appearing like a mixture of pus and lymph, of the colour without any of the other characters of gangrene, becoming darker near the neck, and through the vagina, where it became much thinner; the neck was also black, and infiltrated with blood, and lobulated. One ovary was congested, the other apparently healthy.

The internal orifice of the urethra was black and ecchymosed, and the walls of the urethra were blackened and thickened throughout.

The pelvis was not measured, but it was found very much contracted.

In the other organs nothing abnormal could be discovered.

The five following cases occurred in the Nursery.

Case IX.—MARY TENEY. *No notes were kept of the history of this case. Post-mortem examination* 33 *hours after death.*

ABDOMEN. The cavity of the abdomen contained about half a pint of a sero-purulent fluid, with a few flackes of lymph floating in it. The peritoneal covering of the abdomen and of the intestines, was much injected. The mucous membrane of the stomach was softened and thickened.

Liver. This organ was of a lighter colour than natural, and when cut into, presented a marbled yellow appearance.

Uterus, etc. The cavity of the uterus was covered at the fundus with an adherent substance, looking much like a portion of retained placenta. That of the body was covered with a thin slate-coloured secretion. The cervix had a dark appearance, and the os uteri was black and thickened. The external third of the vagina presented a black appearance. The ovaries and broad ligaments were injected.

Vessels. The vena cava ascendens and descendens, the iliac and uterine veins, as far as the branches that divide in that organ, were reddened.

Head. The membranes of the brain were highly injected. The internal lining of the sinuses and veins was natural.

Case X.—Attacked 3d day after delivery. Treatment opiates, fomentations, spirits turpentine, &c. Death 4th day. Peritonitis with slight sero-purulent effusion: inflammation of the mucous membrane of stomach.

Sarah Monday was delivered of her first child on the 28th of February, after a perfectly natural and easy labour.

March 1st. Her pulse became accelerated and the abdomen tympanitic, but she complained of no pain when pressure was made over that region. Her countenance was expressive of suffering and anxiety. Ordered a scruple of calomel, to be followed by oil, and hot fomentations to be applied to the abdomen. The medicine operated freely on her bowels. In the evening she became restless and uneasy. Sixty drops of laudanum were given her, and the fomentations to the abdomen continued. Four hours afterwards repeated the dose of laudanum.

March 2d. Slept none last night, but continued restless and muttering, though complaining of no suffering. This morning her eyes are bloodshot, her countenance pale and expressive of great anxiety; mind wandering, although when spoken to she answers correctly. Tongue pointed, red at the edges, and covered with a white fur in the centre. Pulse 100, rather small, but soft and easily compressed. Fomentations continued, and diluent drinks with effervescing draughts allowed her.

March 3d. No improvement; abdomen much distended. The following mixture was ordered her, in tablespoonful doses:—

Spirits of Turpentine,	ʒjj.
Tinct. Assafœtid.	ʒi.
Mucilage,	ʒv.
Sugar,	q. s.

The first dose was retained by the stomach; but the second was vomited, together with a thin greenish fluid.

At half past 3 P. M. administered an injection, containing an ounce of turpentine and half an ounce of castor oil. This brought away a large quantity of dark fœtid fæculent matter, and much flatus. At 10 P. M. ordered a tablespoonful of spirits of turpentine undiluted, and flannel soaked in the same, to be applied to the abdomen.

11 P.M. No improvement; countenance still anxious; lips livid; restlessness and occasional sighing; pulse small and fluttering; extremities cold. Mustard draughts applied to the legs, and half the previous dose of the turpentine administered, which was partly vomited a few minutes afterwards.

March 4, half-past 1 A.M. Has vomited several times small quantities of the peculiar fluid before mentioned. Hands and legs are now cold and clammy. Warm wine and water was given her, and hot fomentations applied to the legs and feet.

Half-past 2. Pulse fluttering and intermittent. She cannot be induced to take anything. Her tongue, which is readily protruded, is covered with a light brown fur.

Half-past 6. Has vomited several times; pulse scarcely perceptible. She died at 11 o'clock, A.M.

Post-mortem Examination five hours after death.

Body covered with purple spots.

Abdomen.—The cavity of the abdomen contained little or no effusion. The peritoneal covering of its walls presented no decided marks of inflammation. That of the intestines was a little more vascular than common, with here and there a speck or two of lymph. In the stomach was found about a gill of a yellowish fluid, smelling strongly of turpentine. Its mucous surface was inflamed near the pyloric orifice, and somewhat thickened.

Liver.— Substance healthy. Its veins were rather gorged with blood, and the gall bladder was distended with a thick, viscid bile.

Kidneys. — Secreting portion taking on a granular and yellowish appearance.

Uterus and Appendages. — A small quantity of a sero-purulent fluid was found between the uterus and the bladder. The broad ligaments were congested, less so however on the right side. The fallopian tube of the right side was injected. The ovaries were apparently in a healthy condition. The Uterus externally presented nothing peculiar. On laying open its cavity, a greenish-gray-coloured deposit, intermixed with portions of bloody coagula, covered the upper portion. Near the cervix, and quite down to the os uteri, the matter was of a dark red colour, intermixed with scattered spots of a yellowish deposit. Its vessels bore no traces of inflammation.

Head. — The vessels of the brain were much congested with blood, and there was much effusion between the membranes and in the ventricles.

Case XI.— Attacked second day after delivery. Treatment; mercurial purge, opiates, turpentine mixture. Death on the third day. Peritonitis, with sero-purulent effusion; inflammation of the ovaries.

Margaret Hollow was delivered of her first child on the 29th of February, after about 28 hours' labour. The child was born without any assistance from art; although, from the deformity of her pelvis, and the slow progress with which the delivery advanced, instruments, it was at one time thought, would be necessary. The placenta was retained for several hours, when the occurrence of hourglass contraction, with severe hemorrhage, rendered assistance necessary. She lost about two quarts of blood. In the evening, some two or three hours afterwards, ordered 60 gtts. of laudanum.

March 1st. This morning found the abdomen tympanitic, and on making pressure over this region, she complained of pain. Her pulse was 120, small and easily compressed. Hop fomentations were applied to the abdomen, and a scruple of calomel, to be followed by oil, ordered her. No lochial discharge had as yet made its appearance. Her breasts were well supplied with milk. (Her child died early this morning of convulsions.) Towards evening she complained of her feet being cold and numb. Mustard draughts were applied to them, and cloths wrung out in hot brandy and water to the inside of the thighs. The calomel had operated freely, and towards evening there was slight lochial discharge. Sixty drops of laudanum were given her at night.

March 2d. Rested pretty well last night. This morning complains of pain in the belly, which is *relieved* by slight pressure. Bowels moved two or three times in the course of the night.

1 o'clock, P.M. — Large quantities of flatus have been passed by the bowels, with relief. The following mixture, in tablespoonful doses every hour, was ordered her: —

Spts. Turpentine, ℥ii.
Spts. Nitre, ℥i.
Mucilage, ʒv.
Sugar, q. s.

3 P.M. — Has taken three doses of the mixture, and large quantities of flatus have been discharged. An injection, containing ʒss. of spirits of turpentine, was administered. Large quantities of flatus continued to be discharged from the bowels, and with great relief. Flannel soaked in the turpentine was now applied to the abdomen, and about 10 o'clock, another injection, containing turpentine and oil, was given her. This last brought away frothy, black discharges, and a round worm. Shortly after this, ordered her a tablespoonful of the turpentine undiluted. Pulse at that time 150, and hard. Half an hour afterwards the pulse had sunk to 100, and was softer and fuller. Belly not much distended. 11 o'clock. — She complained much of the smarting of the application to the belly, and could with difficulty be induced to keep it on for any length of time; pulse 100; belly soft and flaccid, and not painful on pressure. About an hour and a half after the first dose of turpentine, she was ordered another.

March 3d, half-past 1, A.M. — Bowels have been moved several times; pulse now small and feeble. Face hot; hands and legs cold. Warm wine and water was administered to her; hot bricks applied to the feet, and fomentations of hot brandy and water to the thighs. Soon after, she insisted on rising from the bed, which she did with but little assistance; sat up in a chair, arranged her hair, and had clean dry clothes put on. She then went to bed and appeared easy, but rather weak and feeble. Warm wine and water was administered freely.

Half-past 6, A.M. — Vomited for the first time; fluid of a greenish hue; belly again tympanitic; and she had frequent eructations. Hands and feet cold and clammy; pulse small and quick. Administered half a tablespoonful of the turpentine, and an injection of oil, with ℥ss. of the same. This brought away a black tar-like discharge. Belly less tympanitic.

Half-past 7, A.M. — Feels easier; pulse still feeble. Wine continued.

Half-past 12. — Pulse fluttering; countenance anxious. Ordered her brandy toddy. She now complains of no pain in the belly, but of great distress in the back. Pulse quicker, but fuller. Stimulants continued.

Half-past 9, P.M. — Still complains of suffering severe pain in the back. Gave her 60 drops of laudanum, which failing to give ease, was repeated one hour afterwards. The pain in the back shortly shifted to the right shoulder. Ordered stimulants to be administered freely throughout the night. About half-past 2, A.M., saw her again, she was then sinking fast, and died about two hours afterwards.

Post-mortem Examination one and a half hours after death. No purple discolourations on the body.

Abdomen. — The peritoneal lining of the abdominal cavity, presented no marked signs of inflammation. The omentum was large, and well lined with fatty deposit. A small quantity of sero-purulent fluid was found in this cavity. The stomach was much distended; the intestines less so. The peritoneal surface of the intestines showed no signs of inflammation. A spot or two of lymph was found on the anterior surface of the spleen. On raising up the uterus with a view to remove it, about 2 oz. of sero-purulent fluid was found deposited between it and the bladder.

Veins. — The vena cava slit open exhibited a delicate rose-coloured appearance, extending down the common iliacs; it was brightest on the anterior surface.

Liver. — This organ was perfectly natural.

Kidneys. — The right kidney was of a white colour, and in its pelvis was found some purulent matter, about ʒi. The left was natural.

The *Stomach* contained about ℥i. of dark-coloured fluid. Its mucous membrane was softened near the pyloric orifice, elsewhere thickened and tough.

Intestines. — Presented nothing worthy of note.

Uterus and Appendages. — Both ovaries were found much enlarged and covered with lymph. The left measured 2 inches in length, and 1 inch and 2 lines in breadth. The right, 2 inches long, and 11 lines in breadth. The fallopian tubes were reddened, and in both there was a great quantity of pus. The right ovary, when cut open, presented a mamillated appearance — as did also the left, though not so well marked; the whole tissure of both seemingly infiltrated with a deposition of lymph. The anterior surface of the uterus was mostly of a white colour, with here and there spots of a pale rose tint. The lower, or posterior surface, was more reddened. Its cavity was covered over, at the fundus, with a thick, tenacious, dark-brown coloured substance, very offensive to the smell; at the neck it presented more of a greenish-gray appearance.

Case XII.— Attacked second day after delivery. Treatment mercurial purgative, opiates, V. S. leeches, calomel and opium. Death on the third day. Peritonitis, with sero-lymphatic effusion; Inflammation mucous membrane of Stomach.

Emmeline Clarke was delivered of her first child March 2d., after a tedious and difficult labour of about 26 hours, caused by deformity of the pelvis, and complicated with hourglass contraction and severe hemorrhage. In the evening, some three or four hours after delivery, her pulse became accelerated, but not more so than was to be expected. A common injection was administered, and after its operation an opiate. She had during labour and the day previous, vomited several times a greenish fluid.

March 3d. Says she feels comfortable; complains of no pain in the belly. Lochial discharge free, and the breasts were supplied with milk.

7 P. M. She now complains of headache, but attributes it to want of sleep. Pulse 148, full and bounding. Some hours previous ordered her ℈i. of calomel, which had operated freely. Dover's powder.

March 4th. Pulse as yesterday; complains of no pain, but countenance anxious and wild. She is now, and has been since her confinement in a peculiar state of mental excitement, evidently suffering, but unwilling to admit that anything ails her and refusing to submit to treatment. At about 11 A. M. the nurse brought the information that she complained of pain at the lower part of the abdomen and had desired fomentations of brandy with camphor to be applied. On visiting her, she denied suffering pain. Applied cups to the abdomen, and in the afternoon an injection of oil with spirits of turpentine was administered.

9 P. M. She now acknowledges that she suffers from pain and soreness in the belly, but stoutly insists that it is owing to the cups, and refuses to have anything further done for her, than the application of fomentations, desiring to be left undisturbed for the night — with the promise, that if she is no better in the morning, she will be prescribed for. She however took xii grs. of Dover's powder, with one of opium.

March 5th. Seems more composed, but her countenance looks anxious and painful. Last night she vomited a small quantity of greenish fluid. Bled her from the arm, to the amount of about ℥xii. which eased the pain and reduced her pulse about 40 beats; 53 leeches were then applied to the abdomen; a blister 6 × 12 to each thigh, and a poultice of bread with the addition of a small quantity of mustard to each breast. Two pills containing 4 grs. of calomel and ¼ of opium were given, and one to be repeated every hour. The nurse was further directed to syringe out the vagina with warm soap-suds and water.

2 P. M. Pain in the abdomen less severe; pulse 110; tongue moist and covered with a white fur. Gruel, with the addition of small quantity of wine was allowed her.

4 P. M. Countenance ghastly; complains of numbness of the feet; forehead covered with large drops of cold sweat; pulse scarcely perceptible; breathing laborious and quick. Ordered wine to be freely administered. She died half an hour afterwards.

Post-mortem Examination 16 hours after death. No discolouration over the body.

Abdomen.—The peritoneal lining of the abdominal parietes presented a white and rather dull appearance. The anterior portion of the serous surface of the small intestines was traversed by numerous arborescent vessels. The omentum was small, and portions of it, particularly near the transverse colon, somewhat injected. On either side of the longitudinal bands of the transverse colon, there was a line of uniform redness about one quarter of an inch broad. In the cavity the abdomen, there was nearly a half pint of brown coloured serum, with flocculi of lymph floating in it.

Stomach and Intestines.—These were much distended with gas. The stomach contained about half a pint of a thick dark green coloured substance with portions of vegetable matter mixed up with it, giving it the appearance of thick green paint. Just below the cardiac orifice and towards the upper or anterior surface of the stomach, there was a red patch of injection, about the size of a dollar, and another near its great cul de sac, having more of a dotted appearance. The mucous membrane was much softened and could be easily scraped off with the finger nail. The mucous membrane of the small intestines was somewhat injected; the fluid they contained was of a greenish hue.

Liver.—This organ was large and triangular in shape. The right lobe extended down to the crest of the ilium. The anterior surface presented a mottled appearance. On the suspensory ligament was a small quantity of lymph. The substance of the liver was healthy; its vessels presenting no signs of disease.

Spleen—Was large and softened.

Kidneys.—A small quantity of pus was found in the pelvis of both kidneys. The left was small and of a white colour. The veins and arteries when cut into, presented a dull-red hue.

Bladder.—This organ contained about a half drachm of pus. Its internal surface was healthy.

Uterus and Appendages.—The broad ligaments were of a purple colour near the uterus; more particularly so on the right side. The cellular tissue between the bladder and uterus, presented a pale straw coloured appearance, as if pus had been infiltrated into its cells. On squeezing the fallopian tube, a small quantity of a milky fluid was discharged. The substance of the uterus when cut into, looked healthy, and its veins were apparently not inflamed. Its internal surface was covered at the fundus with a dark brown, very fœtid, stringy matter, intermixed here and there, with a gray, ash coloured deposit. Towards the cervix it was less dark, and presented more of the gray substance, dotted with red. The ovaries were large and reddened.

Head.—The membranes of the brain were not much injected, showing but slight vascular turgescence. The arachnoid was somewhat thickened and of a yellow colour. There was considerable effusion into the ventricles, and also at the base of the brain.

Case XIII.—Attacked tenth day after delivery. Treatment V. S. leeches, vesicat. calomel and opium; opium; and turpentine injection. Death on the third day. Peritonitis with effusion of serum and lymph. Inflammation mucous membrane of Stomach and large intestines; inflammation of right ovary.

Frances Reddy was delivered of her first child, Feb. 25th, after a perfectly natural and easy labour. Everything went on well until March 5th, when she began to complain of pain in the belly. Her pulse was 100 and full. Ordered V. S. to the amount of ℥ xii. and applied six dozen leeches to the abdomen, a blister 6 x 12 to each thigh, and a pill of calomel grs. 4, opium gr. $\frac{1}{4}$ every hour. Three hours afterwards when seen again, complained of no pain in the abdomen, and suffered but little when pressure was made.

Half-past 10 P. M. Found her screaming out with pain in the belly; pulse 80, small and soft. Her countenance expressing more of anxiety and alarm, than of acute pain. Ordered xii grs. of Dover's powder, with one of opium.

12 o'clock. Has fallen into a calm sleep. Skin moist; pulse soft and not beating over 100. Bowels had been freely moved.

March 6th, 7 o'clock, A.M. Found her dozing—she awoke during the visit and expressed herself as feeling much better. About 4 o'clock this morning she took a small quantity of thin gruel.

Half-past 7 P. M. Has been quiet and composed during the early part of the day, complained of no pain, and inquired about her child. This evening found her in a semi-somnolent, drowsy state with twitching of the tendons of the left hand and intermittent pains in the belly. Her thighs and legs are drawn up, when the pain is upon her. Breathing, short and quick; countenance wild and anxious; pulse small, quick and intermittent. The left cheek hot and flushed; right, pallid and cold. Abdomen tympanitic. She now takes the pills every half-hour.

8 P. M. Ordered her an injection of Spts. Terebinth and oil. She is dozing all the time, and wandering in her mind. Pulse 148, and small. Tongue dark red at the edges, and covered with a greenish fur in the centre. A Dover's powder was given her.

Half-past 9 P. M. The injection has brought away dark green discharges; her pulse 154; took another Dover's powder.

May 7th, half-past 5 A. M. She was restless and uneasy the rest of the night. She now lies on her right side. Her pulse scarcely perceptible; hands cold and clammy; dozing and muttering. When aroused, she looks wild and anxious. The right cheek is now hot; the left cold. She died about half-past 9, having vomited a short time previous a quantity of greenish fluid.

Post-mortem Examination one hour and a half after death.

Abdomen.—The stomach and intestines were distended with gas. A small quantity of pure serum was found in the cavity of the abdomen. Strings of lymph lay between the folds of the intestines. There was slight arborescent injection of the peritoneal lining of the visceral walls. The mesentery was traversed by numerous vessels. A small quantity of lymph was found between the stomach and spleen.

Stomach and Intestines. — The mucous membrane of the stomach was softened. It contained about half a pint of green fluid. The small intestines showed no signs of inflammation. The mucous membrane of the cœcum, and about six inches of that of the colon, was of a deep, reddish-brown colour with ash-coloured spots, thickened and readily peeling off. For two feet beyond, the membrane was healthy, then precisely the same appearance and condition of the intestine was continued on for about one foot; the rest was natural.

Kidneys. — Presented a little more vascularity than natural.

Liver. — This organ was of a mottled colour externally; its vessels were not inflamed. The gall bladder was filled with dark green bile, intermixed with light copper-coloured spots.

Uterus &c. — There was a small quantity of lymph between the uterus and bladder. The external surface of the uterus presented no abnormal appearance. The right ovary was enlarged, and on cutting into its substance, several small abscesses about the size of a pea, were opened into. The broad ligament of the same side was thickened and puffed out by deposition of lymph. The internal surface of the uterus was covered with a pink-coloured matter of the appearance of healthy lochial discharge. Its vessels were not inflamed.

The four following cases occurred in the Black Hospital; they were all fatal in their termination.

Case XIV. — Attacked the third day after delivery. Treatment V. S. enemata. Death on second day. Peritonitis with sero-lymphatic effusion; Pus in the fallopian tubes; congestion of brain.

Elizabeth Wilson, a negress, was delivered of her first child on the evening of the 17th of April. The labour was severe and tedious, continuing about 26 hours. The following morning she complained of pain in the belly, and her pulse was accelerated. A dose of castor-oil was administered.

April 19th. Complains of chilliness; ordered a purgative, and warm applications to body. In the evening she became restless, and complained of suffering much pain; pulse accelerated and feeble; voice reduced to a whisper. She was bled till she became faint, without producing any marked effect in the symptoms.

April 20th. An enema was ordered. About 9 o'clock in the morning, she was comparatively easy; her medicine had operated freely, and she expressed herself as feeling somewhat better; pulse about 100; abdomen somewhat tender to the touch, and not very tympanitic. Tongue covered with light brown fur; she complained of a burning sensation in the stomach. Ordered iced drinks and light nutritive food. Towards evening the pulse began to sink, and the extremities became cold; frictions and warm applications were directed, with brandy internally — but she soon became insensible, and died about 11 o'clock P. M.

Post-mortem Examination 16 hours after death.

Abdomen. — The abdominal viscera were not much distended. Lymph in considerable quantities lay upon and between the folds of the small intestines In the abdominal cavity there was about half a pint of a yellowish serum. The peritoneal lining of the walls of the abdomen presented numerous injected vessels; that of the intestines was but slightly injected.

Stomach and Intestines. — The stomach contained a quantity of a yellowish brown coloured fluid. Its mucous membrane was sound and presented no other abnormal appearances, than two patches of dark injection near the pyloric orifice. The intestines presented nothing worthy of note.

Liver. — The substance of this organ was healthy; the internal surface of its veins was of a dark red colour. The gall bladder was filled with a viscid tar-like bile.

Kidneys. — Both kidneys contained in their tubes, small quantities of a purulent secretion.

Bladder. — There was red ecchymosis near its lower and anterior portion, and a secretion, like that found in the kidneys, could be scraped off its surface in very small quantities.

Uterus and Appendages. — The uterus externally, presented nothing worthy of note. Its internal surface was covered at the fundus with a glairy, dark-claret coloured secretion, which scraped off, left a clear and apparently healthy surface beneath; at the cervix it was covered with a gray ash-coloured and stringy secretion. The ovaries were slightly congested. On laying open the fallopian tubes, a small quantity of purulent fluid was found covering the surface.

Thorax. — Both lungs contained a quantity of frothy serum. The trachea and bronchial tubes were reddened. The vena cava descendens presented, on its internal surface, a dark red appearance, throughout its whole extent.

Head. — The brain showed much venous and arterial congestion. There was a much effused fluid between the membranes and in the ventricles.

Case XV.—Attacked on the 2d day after delivery. Treatment Spts. turpentine internally, and by fomentations; opiates. Death on 6th day. Peritonitis with sero-lymphatic effusion; pus in the fallopian tube.

Maria Allen, a colored woman, was delivered of her first child on the evening of the 15th of May. About 9 o'clock P. M. the following evening, she was attacked with a severe chill, followed by great excitement; skin very hot and dry; pulse 130; complains of pain in the right side of the head and right eye shooting to the back; abdomen tender to the touch, but not tympanitic. Half an ounce of spts. turpentine was given her. About 12 o'clock her pulse was softer, and the pain in the abdomen had mostly subsided. A tablespoonful of the turpentine was ordered her every hour.

Half-past 4 A. M. Still some little tenderness over the abdomen; pain in the head and eye has left her. As the medicine had not operated on her bowels, she was ordered three table-spoonsful of the turpentine at a dose; flannel dipped in the same to be applied to the abdomen.

8 A. M. The medicine has operated freely on her bowels, and the patient expresses herself as feeling much relieved. Pain in the abdomen has entirely left her. Pulse 134, soft and full. The application of the turpentine to the abdomen, was endured only for a short time. Ordered another table-spoonful of the turpentine, and directed the fomentation to be applied on the recurrence of the pain.

12 o'clock. She is now sweating freely. Her bowels have been moved several times. Pulse 134; she has taken eight table-spoonsful of the turpentine; now complains of no pain in the abdomen or head. Omitted the turpentine, and ordered mucilaginous drinks. About two hours after she fell asleep; her pulse beat slower, and more regular.

Towards evening, the pulse became more accelerated, and the patient complained of pain in the abdomen. Three table-spoonsful of the turpentine were given at intervals of an hour; this produced free discharges from the bowels, and relieved the pain. About half-past 10, xii grs. of Dover's powder with one of opium were administered, which failing to induce sleep, was repeated twice afterwards, at proper intervals.

May 18th. Slept pretty well last night, and this morning seems much more comfortable; pulse 124, and soft; and but slight tenderness of the abdomen. By request, some panada was allowed. Towards evening, the patient again became uneasy; the fur on the tongue was thicker and more slimy. She complained principally of pain in the right thigh. The pain soon after returned to the abdomen, and her pulse rose to 148; the lochial discharge which had hitherto been pretty free, diminished. Two table-spoonsful of the turpentine were given her. About 1 o'clock, she complained of headache, but the turpentine had operated on her bowels, and her belly was relieved. Ordered 12 grs. of Dover's powder, with one of opium.

May 19th. Slept pretty well last night; evacuations from bowels, of which she had several last night, of a greenish yellow colour. About 9 o'clock, the pain in abdomen again returned. ℥j of turpentine were given, which produced relief. Ordered 5 grs. of nitre every hour, in mucilaginous drink.

In the evening, the pain in the abdomen returned with double severity; the warm turpentine fomentation was applied, which relieved it.

May 20th. Has taken two powders of opium and Dover's powder; slept 3 or 4 hours last night; bowels moved several times. Took small quantity of gruel and mucilaginous drinks; the pain in the abdomen intermittent. In the afternoon, she again became worse; pain in the abdomen severe; tongue covered with a brown thick slimy coat; continues the nitre. About half-past 7, she threw up a small quantity of a grass-green fluid, and pulse rose to 160. Ordered her six pills, containing Camphor 3 grs., Ext. Hyosciamus 2 grs. every hour.

May 21st. Vomited about a table-spoonful of greenish fluid last night. This morning, tongue covered with a thick, brown, tenacious fur; edges paler, with somewhat of a livid hue. The pulse became feeble as the day advanced,— brandy and milk was allowed her — but she gradually sunk, and died at 2 o'clock, P. M., passing into a state of insensibility, about half an hour previous to death.

Post-mortem Examination 26 hours after death.

The viscera not much distended with gas. The peritoneal covering of the parietes and of the intestines, presented patches of bright injection. No lymph was found either on the intestines or floating in the fluid, of which there was about half a pint in the cavity, of a reddish colour. Between the uterus and bladder, the fluid was of muco-purulent nature. The whole cellular tissue between the mesentery and the different viscera, was puffed out with deposition of lymph.

Stomach.—This organ contained about half a pint of fluid of a yellow colour; its mucous membrane was somewhat thickened and softened, with here and there spots of ecchymosis.

Intestines.—Mucous membrane perfectly normal; they contained a large quantity of yellow fœces.

Liver.—This organ was very much softened; readily breaking down under the fingers. When thus broken up, it presented a mass of granules of the size of mustard seed. The gall-bladder contained thick black bile, intermixed with bright gold-coloured spots. Its vessels contained a quantity of uncoagulated blood, and their internal surface was of a dark chocolate colour.

Urinary Apparatus.—The kidneys were somewhat more vascular than natural, but presented no other signs of disease. The urinary bladder was normal.

Spleen softened.

Uterus and Appendages.—The fallopian tubes and broad ligaments, were much congested on their peritoneal surface. The left fallopian tube when slit open, showed vascularity of its internal surface, and towards its upper portion a quantity of pus was found. The right was also vascular; but no pus was seen. The ovaries were flabby, their peritoneal surface much injected. The cavity of the uterus was covered over from the fundus down to the cervix, with a dark chocolate, stringy substance, which was easily scraped off with the knife, showing the surface beneath injected. The cervix was covered with a firmly adherent substance, of a greenish-gray colour, with spots of white. The os uteri was of a dark purple colour. Beneath the peritoneal surface of the uterus, there was much deposit of lymph.

Chest.—The lungs were congested with blood. The pericardium contained about a gill of a reddish fluid.

Vessels.—The vena cava presented a chocolate colour on its internal surface.

Head.—Not examined.

Case XVI.—Attacked the 2d day after delivery. Treatment, camphor and opium; purgatives, fomentations, V. S. &c. Death on the 6th day.

HESTER CASSAM, negress, aged about 35, was delivered of her third child, Feb. 3d, after an easy labour of about four hours. On the succeeding morning, she took two ounces of castor-oil, which procured two evacuations; to accomplish which, she unfortunately left her bed, and was shortly after seized with a chill, and severe pain in the lower part of the abdomen; but as she had been accustomed to suffer considerably from after-pains, but little was thought of it, and a pill of camphor and opium, was given to allay it. On visiting her shortly after, and finding the pain not diminished, 10 grs. of Dover's powder was given, and fomentations, were applied to the abdomen. In the evening, directed sulp. mag. ℥ ss. and calc. mag. ʒij.; and ordered her to be cupped, which it was subsequently ascertained she would not allow to be done.

Feb. 5th. Has vomited some green bilious fluid; pain relieved.

Evening. Pulse 110, full and strong; tongue covered with a thin white fur; abdomen, tender on pressure, especially the uterine region. Has vomited during the day considerable quantities of the peculiar green fluid. Ten cups were applied over the abdomen, but owing to the relaxed state of the integuments, but little blood was drawn. A large fomentation was applied after the cups, and six ounces of blood were taken from the arm. She was allowed flaxseed tea, and cream of tartar water, ad libitum.

Feb. 6th. Found the pulse not materially altered; has vomited considerable during the night; tongue and lips of a peculiar green colour. Ordered ten grs. of calomel.

Evening. Appeared better; less pain on pressure; pulse moderated greatly in force; but the same discharge continues from the stomach. Continue drinks.

Feb. 8th. Patient somewhat easier; tongue cleaner; pulse about the same; vomiting still continues. Evening. Appears quite comfortable; perspiration profuse. Ordered Dover's powder 10 grs.

Feb. 9th. 7 A. M. The nurse states a change had taken place within a quarter of an hour. Found her moribund. Stimulants were exhibited unavailingly, and she died at half-past 8 A. M.

Unfortunately, no examination was made of this case, as the body was removed.

Case XVII.—Attacked the 3d day after delivery. Treatment, V. S.; Peruvian Bark; afterwards Spts. Turpentine. Death on the 5th day. Peritonitis, with effusion of lymph and pus; inflammation of the mucous membrane of Stomach and small Intestines; deposit of lymph in the Ovaries.

LUCY GREEN, a black woman, aged 21, of rather spare habit, was delivered of her 2d child, after an easy labour of about five hours, on 4th March. On the 5th, she complained of pain in the abdomen; but, as the pulse was not accelerated, it was considered merely the effect of labour; 10 grs. of Dover's powder was ordered, and she rested pretty comfortably during the night. Lochiæ free, and milk secreted in small quantity.

March 6th. Has had no evacuation from the bowels, since delivery; tongue coated with a thick yellowish-brown fur; took calomel 10 grs. About 3 P. M. shortly after she had taken the powder, she complained of griping pain in the stomach, which she said followed a draught of cold water. Pulse natural, (78.) Ordered hop fomentations, and camphor mixture, which latter, she vomited shortly after its administration. At half-past 10, found her in a violent chill, which lasted 15 minutes; complaining of pain on pressure over the abdomen; pulse very rapid (140,) and small; surface of the body, cool; skin contracted; as the chill passed off, the pulse rose in force; skin became hot. She was bled 24 ounces, when she fainted. After recovery, her pulse was 108, fuller and stronger than before bleeding. About half an hour after, she complained chiefly of pain in the head, that in the abdomen being not very acute; gave her ten grains of Dover's powder, with one of opium. As all other methods of treatment had been ineffectually tried in the other cases, commenced the administration of bark, in accordance with the recommendation of Dr. Burns, in doses of a drachm every hour.

March 7th, 2 o'clock, A. M. Pulse 106; tongue pointed and covered with a thin white fur; complains less of pain, and appears somewhat wandering in her mind.

6 A. M. Pulse 98; complains of no pain in the head, but of some soreness over the abdomen. 8 o'clock. Pulse 116, soft and compressible; pain in the abdomen, none in the head. As the bark had caused neither vomiting nor purging, it was directed to be given in drachm doses, every half hour. About 9, complained of the slightest touch on the abdomen; directed a large plaster to be applied, thickly sprinkled with opium. This, somewhat relieved the pain.

11 o'clock. She was on the close stool, (no passage however.) Complains that the powders make her sick, but has not vomited; countenance, not particularly anxious, but rather dull. Pulse 116, stronger and full.

Noon. Tongue coated with a brown fur; pulse 124, full and strong; bowels not loose. The patient appears stupid, and complains of considerable pain on pressure.

6 P. M. Pulse 146; vomited the last dose of bark; ordered it per anum, but instead of being retained, she passed about a quart of a greenish looking fluid. 8 o'clock, directed to take the bark ʒj. every two hours.

March 8th, 7 A. M. Pulse 140, small; tongue covered with a whitish fur; bowels have been opened five times during the night. Rejected the bark but once from the stomach. Complains less of pain, but suffers still from pressure over the uterine region; countenance is somewhat expressive of anxiety. Lochial discharge rather pale; milk scantily secreted.

Half-past 6 P. M. About one hour since, vomited a pint of green fluid, attended with hiccup. Has had two small evacuations from the bowels; pulse the same; pain in the abdomen more acute. The green vomiting being regarded as a fatal symptom, and as an evidence of the inutility of the treatment with bark, its further use was abandoned, and half an ounce of spts. of turpentine was given. She shortly passed much wind, by the mouth; and finally the medicine, together with about half a pint of the greenish fluid.

Half-past 9 P. M. Complains less of pain. As she had rejected the medicine, it was repeated; and cloths steeped in spts. of turpentine, were applied over the abdomen.

11 P. M. Pulse upwards of 140; has passed about a pint of brownish coloured water. No vomiting since last visit.

March 9th, 5 A. M. Has vomited several times during the night; hiccup continues; secretion of milk and lochiæ partial. During the day edges of the tongue cleaned to a very considerable degree. About 11, gave a table-spoonful (about ʒij,) of spts. turpentine. Pulse small, rapid, and feeble; respiration 60 in the minute, and thoracic. A few minutes after the administration of the turpentine, it was ejected from the stomach; and an enema of spts. of turpentine ℥ss, and Ol. Ricin. ℥i. with a pint of warm water was given and retained. At 1 o'clock, P. M. has had a passage from the bladder, of the same brownish fluid, but no passage from the bowels. Ordered spts. of turpentine ʒj. every hour, till she should have a stool; which was continued until half-past 5, P. M. without effect. Directed an enema of

Spts. Tereb. ℥j.
Ol Ricini, ℥ij.
Aqua, oj.

Pulse 134.

March 10th. Midnight. No passage, either from the bowels or the bladder. Gave spts. of turpentine ʒij. and ol Ricini ʒij. Hiccup slight; tongue quite clean; respiration thoracic and frequent. 5 A. M. Pulse very rapid and small; breathing hurried; distinct mucous rattle over the posterior part of the chest. No evacuation since last visit. Enema repeated; no hiccup; bears quite strong pressure over the abdomen, without appearing to suffer much. Half-past 8. Enema was expelled shortly after the administration, but no fœces: Respiration 64; pulse upwards of 140. 10 o'clock. Respiration 60; pulse somewhat stronger, but continues the same in frequency. Has had a liquid stool, of a yellowish colour, about a pint and a half in amount; tongue covered with a slight whitish coat; expectorates a thick mucus.

2 P.M.— Respiration much hurried; pulse extremely feeble and fluttering; mucous rattle over the whole of the chest; expectoration diminished. The patient died a few minutes afterwards, and 88 hours after the chill.

Post-mortem examination two hours and a half after death. Body slightly emaciated; abdomen tympanitic; limbs somewhat rigid.

Abdomen.— Anterior face of the intestines, upper surface of the liver and diaphragm, and parietal peritoneum, covered with a thick layer of lymph; spaces between the convolutions of the intestines filled with it, and containing a small quantity of fluid of the colour and consistence of pus. The peritoneum itself vascular, the vessels of a purplish colour; omentum sealed to the intestines on the one side, and to the parietal peritoneum, on the other, by plastic lymph, and its free border, purple with injection. The mesenteric, and posterior part of the membrane, gave little evidence of the inflammation.

Stomach and Intestines. — Distended with gas and fluid; fluid in the stomach thin, and of a dirty green colour; lining membrane of the stomach reddened, particularly the cardiac extremity; becoming towards the pylorus, of a pale pink hue; in all parts a little thickened, and slightly softened. The mucous membrane of the jejunum, nearly everywhere thickened, and softened; that of other ileum and colon, apparently healthy. The intestines contained a large quantity of a yellowish brick-coloured fluid, that had a strong colour of turpentine and little of fœces.

Liver. — Large, firm, and of an uniform healthy colour; the internal surface of the veins, of a milk colour, and perhaps a little thickened. Gall-bladder full of dark green bile, of a consistence a little greater than that of blood.

Spleen. — Colour, size, and consistence natural. Some lymph on the external surface.

Kidneys. — Healthy. Bladder, natural. Pancreas, normal. Mesenteric glands not largely but sensibly increased in size.

Uterus. — Peritoneal coat, more vascular than any other parts of that membrane. Substance apparently healthy, vessels nearly empty, and of an healthy colour; inner surface covered with a layer of bright pink, flocculent matter, which could be easily scraped off from the lining membrane, leaving the latter transparent, and without inflammation. Remains of the decidua on the upper and anterior portion, which was not covered with this adventitious substance.

The colour of the foreign matter, deepest towards the orifices of the fallopian tubes.

Ovaries. — Both larger than usual, covered with shreds of lymph externally; and internally exhibiting numerous small deposits of the same. Vessels healthy.

Fallopian Tubes. — Deeply injected at the fimbriated extremity, as was also the upper parts of the broad ligaments. No pus in either, but a few drops resembling milk and water, in each.

Vessels. — Cava, iliac, renal, and uterine veins, free from all appearance of disease.

Heart. — Right side, full of blood; left, nearly empty; vessels on the surface numerous. Pericardium, a little vascular, containing about one ounce of clear serum. Lining membrane healthy.

Blood. — That from the large vessels, coagulated rapidly.

Pleura. — On each side, somewhat injected, and each cavity contained a small quantity of serum.

Lungs. — Small and collapsed; no post-mortem congestion. The bronchial tubes contained a small quantity of mucus, and were slightly, if at all, vascular; in other respects healthy.

Head. — Vessels of scalp, and dura mater, bloody. Skull very thick. Half an ounce of serum above, and some below the arachnoid, on the convexity of the brain. Vascularity of the arachnoid, especially in the occipital fossæ. About two ounces of clear fluid remained in the skull, when the brain was removed, and the lateral ventricles contained each half an ounce or more; the vascularity of the pia mater, not remarkable in the capillary vessels, but the larger vessels were of great size, and bordered with white lines. The brain itself was but little congested.

The three cases which conclude this Report, occurred at the Lunatic Asylum, Blackwell's Island, after the removal of the lying-in-women to that place. The post-mortem examination of all of them was made two or three days after death at Bellevue, when decomposition was far advanced.

Case XVIII. — Attacked the 8th day after delivery. Treatment, calomel and oil, fomentations. Death on 5th day. Peritonitis.

CATHARINE BANNEGAN admitted March 5th. Æt. 33; born in Ireland; pregnant with her first child; has been in ill health for eight months past, and is naturally of feeble habit.

May 1st. Was taken in labour, which lasted 42 hours, and was extremely difficult, owing to the pelvis being slightly deformed, and a transverse ligamentous band within the mouth of the vagina. The band was divided, and the head perforated, after which, the labour was completed naturally. Gave pulv. Dover. gr. xii. after which she slept four hours. No unpleasant symptoms appeared until May the 8th.

May 8th. Complained of severe colic pains, which yielded to anodynes and warm fomentations over the abdomen. The above pain was relieved by pressure. Ordered Sub. Mur. Hyd. grs. xv.

May 9th. Pulse 106; flatulence increased; lochiæ stopped; great anxiety of countenance; vomited matter of a bilious appearance; respiration hurried; stools natural. Directed Ol. Ricini. ℥i. and continued the warm fomentations to the abdomen.

May 10th. Pulse 120, feeble; anxiety increased; tongue a little furred white; skin moist; stools fœtid; complained of pain in the head; tympanitis. During the day showed symptoms of delirium, which in the evening became violent; pulse increased to 140, feeble; perspiration copious.

May 11th. Pulse thread-like; evidently sinking; used stimulants freely, but the patient died at 2 o'clock the following morning.

Post-mortem examination. — Body in an advanced stage of decomposition.

Abdomen. — This cavity contained a large quantity of fluid of a reddish brown colour — but no lymph. Its peritoneal covering was not much injected. The serous covering of the intestines was much injected. The viscera were much distended with gas.

Stomach and Intestines. — The stomach contained a quantity of fluid of a bright yellow colour. Its mucous membrane was thickened and somewhat softened, with numerous patches of ecchymosis, particularly towards the pyloric orifice. The intestines were apparently sound — the fluid they contained was of a similar colour with that found in the intestines.

Uterus and Appendages.—The cavity of the uterus was covered with a tough, gray, ash-coloured substance, which could with difficulty be scraped off. The os uteri presented a dark gray colour. The fallopian tubes and ovaries were much injected.

Bladder.—The internal surface of this organ was natural. A thin puruloid matter could be scraped off in small quantities.

Head not examined.

Case XIX.—Attacked on the 5th day after delivery. Treatment, mercurial purgatives. Death on the 3d day. Peritonitis, with effusion of pus.

Sarah McCann admitted April 30th; born in Ireland; eight days in this country before admission; æt. 21; pregnant with her first child; general health good.

May 7th. Was in labour 4 hours, which was perfectly natural, and appeared comfortable until May 11th.

May 11th. Appeared restless; bowels constipated; pulse 90; tongue furred, white; skin dry; lochiæ stopped; milk secreted. Gave Sub. Mur. Hyd. gr. x. Pulv. Jalap. grs. x., which acted kindly, and the patient appeared relieved.

May 12th. Pulse 100; skin moist; lochiæ stopped; milk free; tongue more clean; no pain in the abdomen; vomited yellowish matter in small quantities. 2 o'clock, P. M. Pulse fluttering; countenance natural; tongue clean; skin moist; slight retching. Gave Sub. Mur. Hyd. gr. xv.; applied sinapisms to the extremities.

5 P.M. Symptoms worse; perspiration increased; rubbed ungt. Hydr. ʒiss. into the abdomen and groins; applied 2 blisters, 6 by 8, to the thighs. 10 P.M. appeared to be sinking. Directed stimulants. Died at 1 o'clock, A. M., May 13th.

Post-mortem Examination.—The body was in an advanced stage of decomposition; face, neck, and inside of thighs were covered with dark purple spots.

Abdomen.—The abdominal cavity contained a quantity of reddish brown coloured fluid, but no lymph. The peritoneal lining was somewhat injected. The serous covering of the intestines seemed very much injected, but when peeled off, which could readily be done, it was found that the injection was confined principally to the tissue beneath. The *Stomach* contained nearly a quart of a deep green coloured fluid. Its mucous membrane was thickened, and softened, and of a dirty brown colour throughout. The mucous coat of the intestines was apparently in a sound condition. A quantity of bright yellow liquid fœces flowed from the intestines.

Uterus and Appendages—About ʒss. of purulent matter was found between the uterus and bladder. The cavity of the uterus was covered from the fundus down to within about an inch of the os uteri, with a dark chocolate coloured stringy secretion. This was easily scraped off, leaving the surface beneath somewhat injected. The rest was of a dark gray colour. The vagina had a dark appearance. *Ovaries.* — These were somewhat reddened on their peritoneal surface; they were flabby and spongy in their texture. The fallopian tubes and broad ligaments were of a dark colour, and from the former a small quantity of pus flowed.

Head. — The substance of the brain was remarkably firm. Its membranes were much injected. The arachnoid, with the pia mater, readily peeled off. There was no effusion between the membranes, and the ventricles were particularly dry.

Chest. — The *Lungs* presented no unusual appearance.

The *Heart* was flabby, and both auricles contained a quantity of a dark and thick, but uncoagulated blood. Its inner lining, particularly that of the auricles, was of a dark red colour.

Case XX. — Attacked the 3d day after delivery. Treatment Spts. Tereb., &c. opiates, stimulants. Death on the ninth day. Peritonitis, with effusion; body much decomposed.

MARGARET SCOTT, an Irish girl, æt. 19, of excellent constitution, was delivered of her first child at the Lunatic Asylum, May 12th, at 1 P. M. after a perfectly easy and natural labour. She slept comfortably during the afternoon and night; the following day her clothes were changed, and she appeared quite well. Lochial discharge free; milk beginning to be secreted; tongue coated with a white fur, partially clean at edges.

May 14th. Countenance anxious; pulse 124, full and quite strong; complains of but little pain, except in the head and the left side; tongue clean at edges; lochiæ free; milk secreted in small quantity; no passage from the bowels since confinement. Ol. Tereb. ʒii. in mucilage.

12 M. Has slept some; no passage from bowels since last visit; pain in the head; countenance still rather anxious, with a blush on the right cheek.

3 P. M. Bowels still confined; pulse 120, full, but compressible; respiration 34, abdominal; no pain on pressure over the abdomen; still complains of the pain in the head.

℞ Ol. Tereb. ℥j.
Ol. Ricini ℥ij.
Aqua, o j. m.

To be given as an enema.

Quarter-past 5 P. M. Injection has operated, bringing away a small quantity of hardened fœces. Has slept some since visit. To take Ol. Tereb. ʒij. every hour, till it affects the bowels.

9 o'clock P. M. Has taken ʒij. once. On repetition she rejected it; pulse and respiration about the same. She expresses herself as quite comfortable.

11 P. M. She refused to take the medicine, and it was administered per anum. She shortly after had two evacuations; medicine discontinued.

May 15th. 5 o'clock, A. M. Visited her several times in the course of the night. She slept some, and appeared more composed; pulse 110; respiration 28. Pulse continued about the same, and she was disposed to sleep.

12 M. Pulse 128, full and strong; complains of some pain in right iliac region, which is not materially increased by pressure. Has vomited once a yellowish green fluid. As she complained considerably of nausea, ordered a soda powder, which relieved it. At two o'clock, she complained for the first time, of pain over the uterus. Her pulse continued about 120, and she appeared restless throughout the day. She took merely mucilaginous drinks. The discharge, and secretion of milk, both continued.

May 16th. 5 A. M. Pulse 118; respiration performed easily, abdominal, not hurried. Had one passage during the night. Does not complain of ardor urinæ. Complains of pressure over the uterine region only. Slept some during the night.

Half-past 12. Pulse 122; left cheek irregularly flushed, and much hotter than the right. Complains of pain in the lower part of the abdomen, to relieve which, a hop fomentation was applied. During the morning, vomited some greenish flaky masses, and about four ounces of a greenish fluid mixed with mucus; evacuations from bowels involuntary.

3 P. M. Two drachms more of Ol. Tereb. were administered. Pulse 128, and did not alter after the medicine. It produced an evacuation of about a pint and a half of clay-coloured liquid fœces. In the afternoon, countenance altered much for the worse; face was flushed irregularly; pulse remained about the same. In the evening, ordered 10 grs. of Dover's powder with one gr. of opium, but this did not procure sleep. Her discharge still continued.

May 17th. In the morning, appeared much better; countenance improved; pulse 114; but change for the worse occurred in the afternoon; bowels became tympanitic, and she complained of pain over the whole abdomen; breathing thoracic and laborious. About 8, the pulse was 130; complains of pain on slight pressure. No passage during the day. Patient lay on her back, with knees drawn up. Directed 10 grs. of Dover's powder with one gr. and a half of opium, and Ol. Tereb. ʒij. The turpentine caused some flatus to pass, and this relieved the distension. The powder procured no sleep, and she took two opium pills, of one gr. each. This enabled her to sleep for five or six hours.

May 18th, 5 A.M. Pulse about the same; respiration 32, thoracic; lies on her back constantly, with the knees drawn up; pressure however, does not give so much pain as previously; irregular flushes on the left cheek; countenance anxious; eyes appear sunken; no vomiting or nausea; the pulse remained about the same. During the day the cheeks were flushed, the respiration thoracic, the voice appeared suppressed, the tongue was covered with white fur, except the edges, which were red, but it was not very different from its previous condition. The lochial discharge, and the secretion of milk, still continue. She has, unconsciously, passages of greenish fluid from the bowels. In the evening, again complained of pain in the abdomen, and her position continued on the back. She appeared somewhat delirious, and was slightly sick at the stomach. Directed Dover's Powder, 10 grs., with 1½ grs. of opium, and two opium pills.

May 19th, 5 o'clock, A.M. Pulse 122, tongue red and thick. She had one passage during the night; was quite delirious, and slept but little, if any; countenance bad; eyes sunken; irregular flushed spots on both cheeks; no vomiting. Continued about the same during the day; the discharge and milk both continued; two passages from the bowels. In the evening complained most of pressure over the epigastric region; respiration thoracic; no nausea. Allowed Aniseed tea to drink, and took the Dover's Powder with opium.

May 20th, 5½ A.M. Pulse 120, has lost its fulness and strength, and is easily compressed; respiration 40; tongue dry, red, and thick; complains but little of pain in the abdomen, but refers it to the back, between the shoulders. Complains also of pain in swallowing; slept four hours during the night; had one passage from the bowels; the discharge still continues, but the milk is but little secreted; the flush on the face has assumed a darker colour. In consideration of the state of the tongue, we determined to try the use of brandy cautiously. It appeared to give more force to the pulse, but made the patient more restless, and it was discontinued. To relieve the distension, which had again become troublesome, ordered Ol. Tereb. 3ij. which changed the appearance of the tongue to whitish and smooth; this lasted for a short time, and then it soon resumed its former aspect. In the afternoon, pain in the abdomen considerable; pulse 136; respiration 46, thoracic; cheeks flushed irregularly in well defined spots. At the outer angle of the left eye, is an eruption resembling Herpes phylctenodes; partially delirious; skin hot and dry; expression of great anxiety in the countenance. The turpentine brought away about half a pint of yellowish liquid feculent matter; and also a lumbricus about six inches long, perfectly dead. She took again the Dover's Powder and Opium, which procured an uneasy slumber; during which, subsultus tendinum was noticed; pulse 122; respiration 34.

May 21st. 5½ A.M. Pulse 134; tongue dry, red, cracked, and thick. Makes but little complaint of pain in the abdomen, but when pressed over the epigastric and right hypochondriac regions, she shrinks. Countenance decidedly bad this morning, the livid spots are not out; delirous; respiration 46, thoracic; tremour of the limbs, subsultus tendinum, and automatic movements of the hands. Again took brandy, but it appeared to render her worse; more restless. Ol. Tereb. ʒij. was again given to relieve the distension; it brought away considerable flatus, but no feces. She became worse in the course of the day; the spots on the face assumed a lived aspect; the breathing was laborious, and a mucous rattle was heard; the pulse was feeble and fluttering; she made but little complaint of pain, except in swallowing; she continued to sink. Brandy, preceded by thick mucilage to shield the throat, was administered as freely as she could take it. Left her about 12 o'clock, with the expectation of finding her dead on my next visit.

May 22d. Patient very nearly the same as at the last visit; perfectly sensible; breathing laborious; pulse feeble and very rapid. She was allowed stimulants freely. Saw her occasionally during the day, but she did not alter materially till about 3 in the afternoon, when her face became perfectly livid; cold sweat broke out, and she died about half past seven in the evening, very quietly, and in the possession of her mental powers.

This patient had no chill, except immediately after the birth of the child. Her discharge continued to the day of her death; scanty towards the last. The milk, for the last two or three days, was suppressed.

Post-mortem examination 62½ hours after death.

The peritoneum, both parietal and intestinal, was distinctly injected. The quantity of fluid in the abdomen scarcely exceeded half a pint, and was of a dirty red colour; lymph was found in small quantities in various quarters. On opening the uterus, the whole body was covered with a dark-red stringy secretion, which could be partially removed with the knife, showing when it was scraped off the mucous lining somewhat injected; the neck was ecchymosed and injected. The ovaries were not materially altered. The vagina presented dark ecchymosed spots, and some injection of its mucous coat. The bladder contained ℨi. of puriform matter, and its inner lining was injected. The kidneys were natural. The veins were universally reddened. The head was not examined; generally the other organs were so much altered by decomposition, that their appearances need not be given.

Memoir on the Pathological Anatomy of the Bones. By GERDY, Professor of the Faculty of Medicine, Paris. Surgeon to the Hospital St. Louis. Translated from the French. By J. G. Adams, M. D.

THE organic diseases of the bones, being a subject but little understood, has for a long period, occupied my whole attention. In commencing my researches, I perceived that our ignorance on this point, was greater than I supposed, for I was conscious that our knowledge of the healthy structure of bone, was too superficial to enable us to understand the alterations produced by a diseased state in the same structure. I therefore determined first to study the organization of bone in its healthy state. The results of these researches I presented to the Academy of Sciences in 1835, and published them in the Bulletin Clinique of the same period.(*)

(*) The following is, in a few words, the results of those researches. The bones are composed 1° of compact tissue, 2° of tissue composed of canals, 3° of areolar tissue, 4° of reticulated tissue.

The compact tissue, is composed of small osseous tubes closely applied to each other, parallel to the axis of the bones, in the long bones, sometimes converging in the flat bones towards the primitive points of ossification. The furrows seen on the surface of the long bones and of some of the flat bones, as the parietal often open into these tubes of the compact tissue, and even into the diploë of the flat bones. The tissue composed of canals, improperly called spongy tissue in the long bones, is a collection of longitudinal canals communicating with each other by minute lateral per-

In the present memoir, I have the honour to present to the Academy, a short exposition of the results of my researches upon the inflammation and organic lesions of the bones; and as inflammation is connected with almost all the diseases of these organs, I will trace it in those, in which we can best observe it.

The inflammation of the bones or *Ostitis*, is a disease much more common than is supposed, or is taught. It is also a great error, to consider the bones in the lowest scale of organs as regards frequency of inflammation. Visit the hospitals, and you will there find, at all times, a considerable number of patients with diseased bones, in which inflammation always complicates the disease, even when it is not itself the principal lesion. Thus, in wounds and contusions of bones, in fractures, caries, articular disease, periostosis, exostosis, osteo-sarcoma, spina ventosa, bony tubercle, there is always inflammation of the tissue of the bone, as is easily proved by the facts I am going to cite; and it is the more easy to be assured of this, as the inflammation leaves traces upon the bone much more durable and manifest, than in any other tissue; traces which may be recognised as easily as the end of a century, as a month after the death of the patients.

Ostitis is rarely a simple form of disease, and probably never but for a short period; we find almost constantly traces of inflammation, more or less strangely marked, in the periosteum and medulla, and often, at the same time, an inflammation of the cellular tissue uniting the diarthrodial cartilages with the articular extremities of the bones. Frequently, abscesses form in the tissues adjacent to a diseased bone, and whether the disease has commenced in the periosteum, medulla, or sub-cartilaginous tissue, it is speedily communicated to the other constituent parts of the bone. Ostitis is also complicated with exostosis and accidental morbid formations, and on its part, complicates spina ventosa, necrosis, wounds of bone, contusions, fractures, and unreduced luxations. Inflamed bones increase in their diameters, become sometimes of less spe-

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forations. The areolar tissue is also composed of small canals, but these are intersected by plates of bone, giving them a cellular structure. This tissue is met with in the epiphyses of the long bones, in the short bones, and in the diploë of the flat bones. Lastly, the reticulated tissue is a net-work formed by the osseous fibres which occupy the medullary cavity of the long bones, and in such of the short bones as present this cavity. The vessels of the bones form a delicate net-work; the vascular coats, extremely attenuated, are spread out through the small canals, and anastomose continually through the openings above mentioned in the vascular canals, and through the medulla which envelopes them. The medulla is a cellulo-fatty tissue, of the same consistence in the medullary cavities, as in the vascular canals, only more abundant in the former.

cific gravity than in their natural state, at other times, the reverse happens. I have never met with bone in a softened state, and I believe that their brittleness is often mistaken for this state, which is an error. Their structure is more or less changed, and presents three kinds of alteration very different from each other, but which may occur together in the same bone. They are as follows: the bone is either attenuated, (*rarifiée*) rendered more compact, (*condensée*) or rendered carious; hence, we have three varieties of Ostitis, the attenuating, condensing, and ulcerating or caries.

In the *first variety*, the attenuating, the bone becomes lighter than natural, and is rendered brittle. This form of inflammation consists in a dilatation of the small canals and vascular apertures, which apertures are probably more numerous than in the healthy state. They are also of the same shape with the vessels which traverse them, and when the periosteum is torn off, the lacerated vessels leave these openings red and filled with blood. These openings are sometimes so large as to admit easily the head of a large pin, or a crow quill. We sometimes find on the surface, or in the tissue of bones, openings of various sizes, not circular in shape like the preceding; these are produced by absorption. When a bone inflames throughout all its tissues, the principal nutritious artery, if there be one, becomes doubled in size. I have a tibia in my possession, among other specimens, in which the nutritious artery has a diameter more than double the ordinary size, and the bone is also covered with a multitude of vascular apertures so large as to be easily distinguished at a distance of several feet; sometimes, also, the nutritious artery extends itself as an insulated vessel, into the interior of the bone. I possess two specimens of this kind in my collection. The dilated vascular canals in the compact tissue furrow its external surface, and give to its interior substance the appearance of the tissue described as consisting of small canals. If a section be made of a long bone attenuated by inflammation, or in a state of inflammation, as for example the tibia, the vascular canals of the compact tissue are so dilated that the thickened walls of the medullary cavity present an appearance analogous to that of the canals of the interior of the bone. If a transverse section of the same bone be made, the first having been longitudinal, we divide the canals of the compact tissue perpendicularly, and perceive their openings irregularly rounded, communicating with the medullary canal. The spongy tissue also, has its canals dilated, and their walls thin and brittle; often, these canals are shortened and the medullary cavity approaches much nearer the extremities of the bones; this cavity is empty, or filled by reticular tissue. The areolar tissue is also to a considerable extent, found empty. These are the changes which explain why the bone should have less specific gravity than natural, and also, why it is more brittle and more easily cut or broken, without being rendered softer. Indeed, as bones which appear softened, are found (when stripped of soft parts by maceration which should have rendered them more soft if they had really been in a softened state,) to be as hard as in their natural condition, I am induced to doubt very much, whether this state ever exists. The dilated canals in the interior of the bone are filled with red medullary substance, but it is difficult to distinguish it from the vessels, so small and delicate are they. These appear excessively multiplied, with numerous ramifications, and are probably larger than in their normal state. Their increase of volume is less evident in this situation, than in the furrows and vascular foramina on the surface of the bone, and especially in the foramen for the nutritious artery, when it is largely dilated. In other respects, these vessels do not constitute a cavernous tissue to be compared with that of the penis, and I cannot accede to the opinion of M. Cruveilhier on this subject. In amputation of the limbs, it is easy to perceive, by the blood which oozes from the tissue of the bone and from the medulla, that their vessels are very small capillaries. In amputation of the penis, on the contrary, the blood oozes as if coming through a sponge.

In the second variety, the *condensing ostitis*, the compact tissue is thickened and sometimes rendered more dense ; the same effect is produced on the canals and reticular tissue. This last tissue sometimes exhibits hard portions of a vermicular appearance, and in this case, the external surface of the bone contains furrows, and vascular foramina very conspicuous, while on the internal surface, the canals are rendered larger. The bone is also more dense than natural in certain points, and less so in others. When the density is excessive, then the specific gravity of the entire bone is greater than in its healthy state. A section of the different tissues presents the appearance of sawed stone. Often the medullary canal is obliterated and appears filled with hardened concretion. The hardened vermicular portions of reticular tissue, resemble clusters of small worms twisted together, filling the medullary cavity entirely or in part, and theyare sometimes especially when they attain considerable size, formed in the centre of very hard, compact substance.

When the bone is rendered lighter than natural, it is owing to the absorption (produced by the vessels, cellular tissue, or the newly formed tissues,) of the vascular canals and foramina. We cannot doubt this to be the case, since there is no appearance of bony detritus around the vessels, and this would have been seen, had the enlargement of the foramina and vascular canals been the result of mechanical friction.

The compactness produced by the condensing ostitis, is evidently the result of internal secretion. We cannot always distinguish the vascular canals, either because they are obliterated, or because this kind of inflammation is developed by juxta position or supraposition. What is the chemical composition of these altered structures? I exposed during twenty-four hours, to the action of diluted hydro-chloric acid, two fragments of bone, the one attenuated, the other condensed. When they were completely softened by the dissolution of their earthy salts, I dried and weighed them; the first fragment had lost seven tenths of its weight, and the latter two thirds, the residue, in either case, being gelatine.

The third variety, *ulcerating ostitis*, or caries, is always attended with more or less abundant suppuration. This ulceration is sometimes superficial, presenting a rough, worm-eaten surface; at other times, deep-seated, forming sinuses, and with a more ragged surface than the former. Up to the present time, the vascular character of these rough surfaces has been misunderstood; and it was not known to be owing to a morbid dilatation of the openings of the vascular furrows, and to the formation of irregular foramina by absorption. Under the rough surface of superficial caries, and around the fistulous surface of deep-seated caries, there always exists inflammation more or less deep-seated, with all the anatomical characters above described. On the surface, or interior of the inflamed bone, are often observed fragments in form of granulations, needles, plates, and concretions, rounded or covered with sharp projections, always irregular in surface. These are portions of inflamed bone separated by ulceration and suppuration, which have destroyed their vitality; just as portions of cellular tissue in a phlegmon are destroyed by the violence of the inflammation. These fragments retain traces of inflammation, and when extracted are red and bleeding. After maceration and drying, they are found to consist of attenuated osseous tissue, brittle, but not softened, with all the characters produced by the first variety of ostitis. These characters are so evident, that we can never confound them with the compact fragments detached by necrosis which are deprived of vitality in a manner entirely different, as we shall show further on. In consequence of this difference, I would designate by the term *spicula* (*esquilles*,) the attenuated fragments produced by caries; and by the term *sequestrum*, the compact and uninflamed fragments of necrosis. It is in this sense, that I employ these two expressions; the language of science will thus gain more precision, and the difference between caries and necrosis, so obscure up to this time, will be more distinct to the mind of the reader. It has been recently asserted, that the spicula of caries only differed from the sequestrum of necrosis by the absence of gelatine. I have assured myself by my own researches, that such is not the case, or that at least, is not always so. To give greater authority to these facts, I requested M. Barruel senior, superintendent of the Laboratory of the Faculty of Medicine of Paris, to ascertain, if there was gelatine in a fragment of carious bone, of the size of a hazel-nut. This fragment having been submitted to the action of dilute hydro-chloric acid, was deprived of its calcareous salts, and lost its solidity, becoming soft, compressible, and of light weight, retaining its form, which it resumed after compression, by its elasticity alone, as soon as the compressing force was removed; it consisted in other words of gelatine.

When ostitis is complicated with inflammation of the periosteum this membrane is thickened, and more, or less, adherent to the bone than in a healthy state; softened, or indurated, and injected with larger and more numerous vessels. When it is strongly adherent; it is because the vessels which it sends into the tissue of the bone are larger, and consequently more resisting than natural, and that the vessels which pass over the surface of the bone were in deeper grooves, and often because the periosteum is closely applied to the irregular concretions which it has secreted; dipping down with the vessels into their aufractuosities. The depth of these furrows depends upon the secretion of bony deposit poured out on the edges of these furrows by either the vessels themselves, or the diseased periosteum. The osseous concretions observed on the surface of bones, are sometimes of considerable size; some times, they resemble drops of fluid concreted on the surface, or scales, being in plates of unequal thickness; at other times, resembling protuberances, irregularly rounded and crowded together; or, finally, nipple-like eminences, with considerable elevation. Their entire surface is smooth and polished, or rough and uneven. There is one variety, whose surface is perforated with vascular foramina, penetrating into the interior of the concretion, which then resembles the tissue of an inflamed bone. These concretions are evidently produced by inflammation or irritation of the periosteum; they are secreted by that membrane, and when perforated by the openings of the vascular canals, their lightness proves that the newly formed vessels were developed at the time when the secretion was yet fluid.

When ostitis is complicated with inflammation of the medullary tissue, by which I mean all the adipose tissue of the bone, (for I cannot admit two different tissues, as Bichat has done,) the medulla is either universally, or partially red and inflamed. In this last case, the inflammation appears in red spots, or in the form of red masses, more or less considerable. Its colour is rarely of a vivid red; it is ordinarily of a reddish brown, and of the colour of wine lees. In chronic inflammation, it is gray, or bluish-gray, softened, and even fluid in certain cases; the medulla is often hardened, as for example, in chronic ostitis consequent on gun-shot wounds. In other cases, the medulla is ecchymosed, presenting evidences of sanguineous effusion, and even points of suppuration. When ostitis attacks the articulating surfaces of bones, and when it is complicated with diarthrodial inflammation, as in the majority of cases of articular disease, the coincidence of these two diseases is owing to their common origin.

The cellular tissue uniting the cartilages to the bone, and which is so delicate in the natural state as to be invisible, becomes thickened, either by its own increased developement, or in consequence of deposition; the cartilages are partially absorbed, becoming thin and flexible as wet parchment, without marked evidences of softening, for their flexibility may be owing to their tenuity. Sometimes they are perforated by numerous foramina, through which the inflamed sub-cartilaginous cellular tissue, red and velvety, is seen projecting, and sometimes the cartilages disappear entirely without leaving any trace of their existence. In this case, the articular surface of the bone seems covered by a thick false membrane, velvety, and of a reddish or grayish brown colour. When we scrape off this membrane, what do we find? the bone bare, and without cartilages. Those writers then, who thought they saw a false membrane, or an inflamed synovial membrane extended over the inflamed cartilages, were mistaken; and they were the more so, in my opinion, as I think it doubtful, if cartilage ever inflames or softens. It also appears doubtful, whether the synovial membrane extends over the entire surface of the diarthrodial cartilages, and it is certain, that if there is a membrane, as I once thought I saw it, it differs as much from the proper synovial covering, as the anterior membrane of the transparent cornea differs from the conjunctiva. It is I say doubtful, whether cartilages inflame; how can I think otherwise? Articular diseases, where we find them perforated, or to a considerable extent destroyed, are very common. I have seen a vast number, and for a long time I have sought in vain for inflammation of this structure. On the contrary, when I see cartilages, wholly, or in part destroyed, I find portions perfectly healthy, and only thinner than natural, in the midst of violent and long continued inflammation. I have often found the cartilage reduced to a few small granulations like pin's heads, and these granulations still adherent, are white, without the least appearance of vessels, hard and resisting. How could they have escaped the inflammation which surrounds them on all sides, if the cartilages were vascular and susceptible of inflammation? How is it that these granulations were not covered by inflamed synovial membrane, if this membrane extended over their surface in their normal condition?

The articular surface of the bone is rough and porous, as if worm-eaten, presenting large openings and deep furrows, which terminate on the edge of the articulate surface ; sometimes these furrows dip down under the bony plates or projections secreted by the periosteum. If the disease occurs in a long bone, it exhibits about the middle of its shaft, spots of a reddish brown colour, consisting of a thin layer of bone easily removed by a cutting instrument, and beneath it the compact tissue is attenuated, vascular, and injected with blood. This external layer is sometimes absorbed, and the bone is ulcerated on its surface, or, in other words, carious. In one example of articular ostitis, I met with an alteration so extraordinary, that I cannot refrain from giving an abridged account of the case. Jacquet, aged 24 years, tailor, entered the Hospital St. Louis about the 24th June, 1831, with disease of the left knee. He was born of healthy parents, who were deceased at the time of his admission into the hospital ; his father at the age of 42 years, in consequence of a violent contusion, his mother at 50 years, of a disease unknown to him. There is no scrofulous taint in the family, and the patient has generally enjoyed good health. About the age of 15 years, he fell upon his left knee, and at the time suffered severe pain. The joint would swell after exercise, and would recover its natural size by repose. After some time, the whole knee became swollen, painful, and rigid ; the thigh diminished in size, especially above the knee. At the time of his admission to the hospital, the left knee was larger than the right, painful, hot, almost inflexible, and the left thigh increased in size. His general health being good, he was treated by rest, poultices, leeches ; and blisters were successively applied over the articulation, and finally compression, which reduced the size of the diseased knee to the healthy standard, and removed the pain. In the month of April, the patient left the hospital, to make room for cholera patients, and could walk pretty well : six weeks after, he fell upon the pavement and struck his left knee ; the local symptoms returned with increased severity and accompanied with fever, the pain extending up the thigh. The patient made use of poultices, and kept the limb in a state of repose. He returned to the hospital on the 24th June 1832, and at that time, the knee was much enlarged, very painful, with heat, redness, and fluctuation above the patella ; the thigh also was painful upon pressure. After waiting a few days in order to prepare his system for the operation, I amputated the thigh. Two days afterwards, having been called to my native province by the breaking out of the cholera, I was obliged to abandon my patient to the care of my colleagues; attacked myself soon after with cholera, I was confined for two months to my bed, and was unable to return to Paris, until after an absence of four months. I found Jacquet convalescent; there had been several abscesses about the stump and along the thigh. At the time of my return, there was an abscess in the fold of the groin, which was discharging freely, and continued to do so for several months after. At several periods, phlegmonous inflammation attacked the stump; but I was enabled to prevent suppuration. Finally, he left the hospital thirteen months after the operation, in perfect health. I despaired of ever meeting him again; when, by accident, I saw him in 1835: he had not experienced any unpleasant symptoms since leaving the hospital. Let us now examine the peculiarities of this case as developed during the operation, and the pathological condition of the femur. At the moment when the knife touched the os femoris, there was a gush of yellow transparent fluid, ropy and of an oily consistence resembling synovia, which flowed over my hands. As I had passed down the knife on the anterior parts of the thigh, as is usually done, I thought I had opened the synovial membrane of the knee, dilated and extending up to about the middle of the thigh. I had seen two instances of this dilatation; and besides, I operated at the inferior third of the member. I was, however astonished, because I had taken the precaution of operating where the thigh was of smallest diameter. I felt a singular crepitus under the knife as I divided the superficial muscles, and a second time, as the section of the deep-seated muscles was completed, when I took hold of the femur to apply the saw, I perceived that it was enveloped in a thin and brittle sheath of bone. Having completed the section, I found the bone of its ordinary thickness and density, but it was surrounded by the sheath just spoken of, which adhered to it along the linea aspera, and was at the other points separated for a distance of about three eighths of an inch. This sheath extended up to the superior part of the femur, and as it was lined by a soft, reddish membrane, in which could be perceived a fluid analogous to that which escaped at the first stroke of the knife, I could not doubt but that this liquid came from the sheath; and, although the femur presented this singular appearance, extending as far above the point where I had operated; and although this state of things excited great doubt as to the successful issue of the operation, I did not feel authorized to amputate the limb higher up, and still less at the hip joint. To amputate higher up at the thigh, was contraindicated, because the disease seemed to extend to the superior extremity of the bone. To amputate at the hip-joint, appeared to me both absurd and cruel; since ignorant of the nature of this new disease which chance had thrown in my way, I had no reasons for supposing it as severe and dangerous as the amputation at the joint, which is almost constantly fatal, and consequently, a desperate resort. I therefore dressed the stump, determined to give him all the attention his case required. On examining the amputated member, I found the synovial membrane inflamed, and filled with a reddish, purulent fluid; the cartilages but little changed, at a few points they had been absorbed; the sub-cartilaginous tissue, red, thickened, and elevated at the points where the cartilage had been absorbed. The vessels of the femur were very numerous, and of large size near the articular surfaces; the cellular tissue was red and congested. The sheath already spoken of, also surrounded the lower extremity of the femur, and when stripped of the muscles covering its surface, was found to be irregular, and at certain points were rounded elevations. Its internal surface adhered to the bone by a few attachments in front, and through the whole extent of the linea aspera behind. It was lined by a soft, vascular, and downy membrane, which was reflected from the linea aspera upon the femur which it also covered, and was lost upon it, near the condyles. It was evidently formed of fibrous tissue, ossified in layers more or less extensive, and so applied to each other as to give its walls a certain solidity, which was sufficient to prevent their collapsing after the escape of the contained fluid. Its vessels were of moderate size, and its tissue was of a yellowish white colour, slightly injected.

What was the nature of this singular disease, and how was it developed? In my opinion, it was a cyst under the periosteum: it was a cyst, for that is defined to be, a membranous pouch containing fluid; it was a sub-periostic cyst, for it was developed under the periosteum of the femur, and even upon the shaft of the bone, which it covered on all sides excepting at the linea aspera. We can very well understand how the periosteum became separated from around the femur excepting at the linea aspera, where it is strongly adherent; we can also easily conceive, that the fibrous membrane of the cyst should become ossified, in layers more or less extensive, and that an abscess should have opened at the end of the stump, even though suppuration had occurred at the fold of the groin, for the extent of the membrane will account for this circumstance. Finally, it is easy to comprehend how that the walls of the abscess, having been distended for some time by the suppuration, have gradually contracted upon themselves and become united, either by the effusion of lymph or the process of granulation. As to the developement of the disease, I consider it the consequence of articular ostitis, excited by the first accident, the fall upon the left knee. This ostitis extended to the body of the femur, exciting a chronic inflammation of the periosteum, and causing it to throw out upon the surface of the bone, a liquid secretion which stripped off the periosteum. The membrane of the cyst was formed by this secretion : it was probably of but small extent at first, but rather in consequence of chronic inflammation, or by the fatiguing exercise which the patient was compelled to use, or by the tendency which such diseases have to progress, the cyst, after a time, attained the size already spoken of. We see, therefore, that this kind of cyst under the periosteum, may develope itself in the same manner as cysts in the soft parts. This form of disease has never been recognised in the living subject. I had no knowledge of it, and the present case is the only example I ever heard of. I did not even suspect its existence, because the cyst being covered by thick muscles, and by an osseous sheath, and being rendered firm and resisting by the fluid which distended it, I was not able to detect any extraordinary symptom. The diminished size of the thigh, being so common after articular disease of the knee, did not attract any particular attention. In that form of ostitis, termed hyperostosis, or exostosis, there is an increase of thickness of either the entire bone, or portions of it. When the entire surface of the bone is involved, its form as well as its structure, is altered. Its surface is irregular and indented by vascular furrows, more numerous and large than in the healthy state. Its structure is sometimes condensed, at others attenuated, or it may become ulcerated and carious, complicated with the formation of morbid tissues more or less vascular, as erectile tumours, fungus hematodes, &c. I do not, however, regard every enlargement of the bones as the result of inflammation; there may be simple hypertrophy without inflammation. When only a small portion of the surface of bone is affected by exostosis, we find an elevation more or less circumscribed, with either a broad base, or attached by a narrow pedicle. I last year removed an exostosis of this description of the size of a child's head, which was attached by a small peduncle to the condyle of the femur. Some exostoses are of compact structure, hard as ivory, and without vascularity ; others are porous, from the number of their vessels ; others, again, contain large cells or cavities filled with morbid secretions, as encephaloid or colloid matter, having a great tendency to degenerate into cancer, or in other words, to inflame, soften, ulcerate, and suppurate, with lancinating pains and other characteristic symptoms. For this reason, this latter variety of exostosis is by far the most dangerous.

Considering the great vascularity of bone, it is not astonishing that so many morbid tissues should be secreted in their substance. Thus we have, as in the soft parts, fungous tissue, lardaceous tissue, schirrus, melanosis, tubercle, and chalky or stony concretions. The bone, distended by these secretions, is absorbed at its circumference, its walls becoming thin, and in some places perforated; the periosteum partaking of the irritation, secretes osseous matter which surrounds the tumour. When the dilatation is partial, and limited to one point, it constitutes the stalactiform cellular exostosis of authors; while, if it comprise the whole circumference of a long bone, it is termed osteo-sarcoma; in reality, they are the same disease, if the new formations be of similar structure. When spina-ventosa is complicated with ostitis, and also in the case of tubercular degenerations, erectile or otherwise of the medullary tissue, the bone is more or less swollen and vascular, as in ordinary ostitis, or osteo-sarcoma, and is inflamed secondarily, or by continuous inflammation. Ostitis is often complicated with necrosis, and is most frequently consequent on it. In this case, we find several sequestra in the midst of the inflamed bony tissue, which are compact, hard, and not friable. When struck by the probe, they sound like hard bone, while, on the contrary, a friable spiculum will not give out this sound. A sequestrum is neither perforated by vascular foramina nor rendered thin by the developement of its canals; its surface is also irregular. Ostitis complicated with necrosis is therefore neither more nor less than an ulcerative and suppurative inflammation, excited by the sequestrum which acts as a foreign body, and resembles the inflammation in the soft parts around an eschar. There is then this difference between the spicula of caries and the sequestrum of necrosis, as regards their loss of vitality, that in the former case, inflammation is its cause; in the latter, its effect. It will have been observed, that in all the diseases above mentioned, the periosteum, bony tissue, and often the medulla, are the seat of inflammation, and also that the greater part of the different forms of ostitis may co-exist in the same bone. It now only remains for me to show that the same changes take place in bones after contusions, wounds, fractures, unreduced luxations, and after long-continued ulceration, as in the tibia.

Wounds of bone are either incised or punctured; the term fracture is applied to solutions of continuity caused either by violence or muscular action. A sabre-cut received on either of the bones of the cranium and the section of a long bone in amputatïon, are alike wounds of bone. In wounds of the bones of the cranium, if the patient dies within a month after the injury, we find the periosteum over the injured bone, and those adjacent to it, much injected. On stripping it off, the vessels appear dilated and more injected than in health; drops of blood also escape from the openings of the vascular canals, and often the inflammation extends to the vessels of the medulla and its diploœ. The same process takes place in wounds of other bones, as may be easily seen after amputation.

Of late years, a great deal has been said of phlebitis occurring in bones after amputation, as a cause of death; but I consider that in the blind spirit of system, only a part of the inflammatory process occurring in these wounds of bone, has been studied. The bone, periosteum, and medulla participate in the inflammation to a greater or less degree, and sometimes through their whole extent. When the patient dies at the end of 15 days, three weeks, or a month, we find the periosteum injected, and sometimes more so than in wounds of the cranium. On tearing this off, the dilated vessels are ruptured and pour out blood, staining the surface of the bone, which is perforated with small openings and numerous vascular furrows. It is to this kind of inflammation that the term phlebitis has been applied, because it was thought necessary to the support of the doctrine of metastatic abscess. It has never been demonstrated that this suppurative inflammation has its seat in the veins of the bone; for with the exception of the trunk and principal branches of the nutritious artery of the medulla, we cannot distinguish their ramifications, they being more delicate than the finest hair; and what anatomist has ever seen inflammation or suppuration in vessels of such extreme minuteness! It is probable that the medulla and its vessels are inflamed simultaneously; but I cannot admit the analogy between these inflammations and phlebitis: and why speak of phlebitis when nothing is demonstrable but inflammation of the medulla? After *fractures*, as every one knows, there occurs an inflammation of both periosteum, bony tissue, and medulla, at the seat of fracture; but it is not so generally understood, that the bone, after its consolidation and even long after death, presents at many points evidences of inflammation or sanguineous congestion; vascular foramina and channels are seen much larger than in health; and often at the points of muscular insertion bony concretions are developed. In order that these appearances should be produced, there must have existed violent inflammation of the periosteum and of the fibrous tissue of the tendons.

These alterations are more strongly marked after complicated fractures, and particularly those resulting from gun-shot wounds, since in the latter there is suppuration and oftentimes ulceration, and consequently a longer period is required for their consolidation. It often happens, even after bony union has taken place, that the medulla and periosteum remain affected with chronic inflammation, which continues for several years, and is liable to exacerbations from very slight causes. In many instances, these exacerbations are slight and soon recovered from; but, in other cases, the callus is absorbed, the fragments of bone become again movable, and profuse suppuration endangers the patient's life;

then amputation is our only resource, and we find the source of the evil in the chronic inflammation and suppuration. We observe similar results after unreduced luxations and in almost all cases of chronic articular disease, of which my collection and the Musée Dupuytren contain numerous examples.

Finally, when an *ulcer* has existed for a long time on the surface of a bone, as, for example, the tibia, the bone participates in the inflammation, as is proved by the vascular furrows and apertures, and by its enlargement in certain cases.

In recapitulation of the effects of ostitis on the bony structure, we have seen it attenuating the tissues, by enlarging the vascular canals, whose walls become thin by absorption; or rendering them more compact, by the deposition of a dense secretion; at other times causing ulceration and caries. The inflammation spreading rapidly from one tissue to another, is often complicated with periostitis, which causes the deposition of new bony matter on the surface of the bone. It is also complicated with inflammation of the medulla or of the sub-cartilaginous cellular tissue of the articulating surfaces. It may also give rise to certain morbid secretions, as pus, fungoid, lardaceous, or colloid matter, tubercle, erectile tissue, cysts, &c., certain of which, as fungoid or lardaceous secretion, may inflame, soften, suppurate, and degenerate into cancer. Spina ventosa, necrosis, wounds and contusions of bone, fractures, unreduced luxations, articular disease, and finally, ulcers near the surface of bones, are complicated with ostitis, which leaves traces of its existence so strongly marked, as only to be effaced by the decomposition of the bony structure.

REVIEWS

AND

BIBLIOGRAPHIC NOTICES.

Medical and Physiological Commentaries. By Martyn Paine, M.D. A. M. Two volumes, 8vo. pp. 1540. New-York, 1840. Collins, Keese & Co. New-York, and John Churchill, London.

This elaborate performance, for the completion of which the profession in this city have been some time looking with solicitude, and to which the attention of our readers was directed in the first number of this Journal, has just been issued from the press. We have as yet had time to look with care only over the first volume, and from the merit and character of the contents of this, we have little hesitation in stating, that the author, in this production, has more than sustained his former reputation as an accomplished medical scholar and philosopher.

The features of the work before us are peculiar. Directing his attention almost exclusively to questions of physiology and medical philosophy, Dr. Paine has throughout his several memoirs, endeavoured to show the direct application of his principles to the practice of the healing art. He has touched on almost every disputed or unsettled point in medical philosophy; treating the most important of these in the form of distinct essays, and merging the less prominent into a series of appendices, which are attached to one or another of the more elaborate essays, according to their particular bearing. Thus, the first volume, occupying 716 pages, is composed of three memoirs: the first of which is devoted to an exposition of our author's opinions on the subject of "The Vital Powers," and occupies about one hundred pages; and to this is added an appendix on the doctrines of life, especially in relation to Galvanism and Electricity. The second essay, which is perhaps the most important of the three, occupying about two hundred and forty pages, is on the "Philosophy of Bloodletting;" and to this are appended, first, a series of cases on Sudden Death from Apoplexy; secondly, an inquiry into the "Pathology of Cerebral Hemorrhage." The third and longest essay in this volume, occupies about two hundred and eighty pages, and is on the subject of "Humoral Pathology." After which, we have, first, an appendix on the pathology of "Scurvy and Diabetes;" secondly, an inquiry into the doctrine of "Endosmose and Exosmose;" thirdly, an exposition of the pathological effects of "Fasting;" and lastly, and appendix on the use of the microscope, as applied to the study of the structure and functions of living bodies.

The second volume, which occupies more than 800 pages, opens with an essay on the "Philosophy of Animal Heat;" this takes up seventy-eight pages, and is followed by another of between forty and fifty pages on the "Philosophy of Digestion;" to which is added an appendix on "Spontaneous Generation." The third essay is devoted to the "Theories of Inflammation;" this occupies nearly seventy pages, and is followed by an appendix on the "State of the Circulation in Fever." The fourth, is an essay on the "Philosophy of Venous Congestion." This is by far the longest of the whole, occupying, with its six appendices, no fewer than four hundred and thirty-five pages; and some of these appended papers constitute important articles by themselves. In the fifth, Dr. P. has given his own views of the "Comparative Merits of the Hippocratic and Anatomical Schools;" and he closes the volume with a critical examination of "The Principal Writings of P. Ch. A. Louis, M. D., &c."

It will be impossible, owing to the haste imposed upon us for preparing our notice of these important essays, in time for this number of the Journal, to give at the present time to both volumes that degree of attention which they justly deserve. Our remarks on this occasion, must, therefore, be confined to the contents of the first volume; the remaining essays we are obliged to reserve for notice in a future number.

Before entering into a minute examination of the work before us, we may remark, that one prominent object, an effort to establish the doctrines of exclusive Vitalism, will be found pervading the whole, binding the various essays into one continuous series, and giving them a mutual dependence on one another. Our author's mind at the commencement of his labour, appears to have been strongly imbued with the importance of this subject; he accedes neither to chemical nor to any other mode of physical action, either part or lot in the vital forces. He is unsparing in his opposition to the recent encroachments of chemical and mechanical philosophy within the province of physiology; and he undertakes to show that these encroachments, instead of adding to our knowledge of the vital functions, or of improving the art of medicine, have a different and even contrary effect. Every inquiry into the laws that regulate the actions of living bodies, he maintains, must turn wholly upon the vital forces. And, says our author, "he who shall regard them as coincident with the powers that rule in the inorganic world, must, as appears to us, travel in a route upon which he will be forever losing his way."

How just is this remark when applied to what has of late years assumed so much importance, under the specious show of experimental philosophy! As for example, Philip's attempt to prove the nervous influence to be identical with galvanism; the doctrine of Berzelius, Prout, and others, who would look upon the living frame as upon a mere chemical laboratory; or of Stevens, who would persuade us that the existence of a few grains more or less of table salt in the blood, constitutes the essential difference between disease and health! Those who are familiar with the principles of medicine as applied to practice, must be sufficiently alive to the tendency of such opinions. They are, nevertheless, daily gaining ground; and the bold attempt to substitute mere physical forces for the vital power, in the study of organic actions, which has recently been made by the celebrated Magendie, in his lectures on the blood, is a sufficient evidence, that at the present moment, vital philosophy is in need of an advocate, able and willing to defend it. Such an advocate is our author.

From the peculiar mode in which Dr. P. has taken up the subjects upon which he treats, his style being argumentative, and leading him into frequent digressions, it becomes somewhat difficult to give a regular analysis of his separate memoirs. We shall attempt, however, to place before our readers his prominent opinions at least, and as nearly as possible in the order in which he advances them.

THE VITAL POWERS.

In his first essay, our author gives an exposition of the fundamental principles upon which all his other views in relation to vital action, whether healthy or diseased, are founded. It is divided into three sections. In the first of these, his object is evidently to lay down the characteristics of what he wishes to be understood as the vital powers,—to mark the points necessary for a full and correct definition of life; and to establish the distinctions that characterize the living forces on the one hand, from those of inorganic matter on the other. In the second section, he enters into an examination of the various physical hypotheses that have been hitherto advanced for accounting for the phenomena of life; and shows by the most laboured argument, that the living functions hold no relation to chemical or mechanical agencies. In the last section, entering upon a disquisition of a more speculative nature, he attempts to show the plausibility of his own belief, that life in its abstract, is something essentially different from matter, "something analogous to the soul itself;" or, "intermediate between spirit and matter." But it is time to allow our author to speak for himself.

"We shall start, indeed, with the fundamental principle, that the whole science of physiology, and of medicine, is primarily concerned with the natural and morbid conditions of the vital forces. These conditions are denoted by the vital phenomena, — which, therefore, though only results, are yet the interpreters of the varying states of the vital powers, and our guide to the application of agents, whose action is alone upon those powers. As these powers may be variously modified by artificial or other agents, so also will their consequences or vital symptoms, with the organic lesions to which the altered forces may lead, constantly inform us of their varying relations to their natural standard." Page 9.

Beginning his inquiry by a definition of the terms to be employed in it, he states that "The words *vital principle*, *vital power*, *organic force*, *organic power*, are used synonymously, and refer to the universal cause of animal and vegetable life, and are employed as collective terms.

"*Vital properties*, *vital powers*, and *vital forces*, signify the various elements of the vital principle or vital power, as they are manifested in *irritability*, *contractility* or *mobility*, *vital affinity*, *sensibility*, and *sympathy*. These several properties have, also, their specific modifications in different parts." Page 10.

After throwing out some general remarks on the theories of life, and rejecting the definition of it, as given by Bichat, Dr. P. comes to the the question, "What is life?" The functions, he argues, in opposition to the views of Bichat, cannot constitute it; inasmuch, as the seed and the egg, although possessed of life, and capable of retaining it for an indefinite period, may remain in a state of quiescence without performing any proper functions. From this and other considerations, he is led to regard life as a cause, and to define it "as consisting of certain specific properties appertaining to organized matter, which are more or less capable of resisting the destructive agencies of inorganic matter, and the forces to which it is liable, and of protecting against them the matter in which they are inherent."

Having thus disposed of his premises, Dr. P. proceeds to criticise the opinion advanced by Hunter, that 'Organization and life do not in the least depend upon each other;' and subsequently the opinion of Millingen, that 'Organization is the result of life.' "The living principle," says our author, "appears therefore, in a philosophical sense to be neither the result of organized structure, nor as described by Millingen, Prout, and others, the cause of organization. Both have co-existed since they were the product of Creative Power: both are necessary to the vivification of dead matter, and the coöperation of both to the farther development of each. Whenever therefore, we speak of the organizing of matter, we necessarily imply its endowment with the properties of life; and *vice versa*, the communication of such properties to matter equally denotes its organization. They are, therefore, convertible expressions. But organized structure may remain entire for an indefinite time, after being deprived of its vital forces." Page 19.

The general doctrine set forth in the foregoing extract, we are not disposed to question; but we must beg leave to differ from the author in reference to the proposition contained in the last clause, viz: that "organized structure may remain entire for an indefinite time after being deprived of its vital forces." Now, if we may be allowed to express our own views on this subject, they would be, that death cannot occur until some cause has supervened sufficient to break up the chain of organic relations between the different essential organs of the living body; and that when this chain of relations has been broken up, the body is virtually as much disorganized as if it had been dissevered in all its members by physical force. This question may at first appear one of mere words, but it has a bearing at least on the speculative portion of our author's doctrine, and we must therefore follow it a little further. In the first place, then, we can have no direct proof of the proposition. "Will it be maintained," he asks, "that there is any change of structure produced by a division of the medulla oblongata, or by a dose of prussic acid?" As to the first example, we are, indeed, somewhat surprised, that our author should have advanced it. He might as well affirm, that the separation of the body into a thousand fragments would not affect its organization: for, if the division of one organ, and that the most essensential, have not this effect, then why should the division of every member in the body? With respect to death from the action of prussic acid, we may remark, that little or nothing is known of the real mode by which this and many other virulent poisons act in destroying life; and though, by our artificial and imperfect modes of examination, no organic changes may be detected in the body after death, yet this is no conclusive evidence that changes have not occurred sufficient to break up the chain of organic relations and dependencies. We subjoin the following remarks from an essay of our own, still in manuscript, although written several years ago, we think them pertinent to the present question:—

"Bodies at present dead, but formerly possessed of life, may still appear to preserve their organization entire; and as far as any given portion of an individual is concerned, its structure may remain unaltered. Yet it must be remembered, that no portion of the living body is to be considered separately, the body must be taken as a whole; and in this light, in order that the individual cease to live, there must be some derangement in its organization. This may be greater or less in proportion to the importance of the parts affected; it may be so minute as to evade our most scrupulous research. Yet it must exist; for, while each organ is itself entire, the power of reciprocal action between the essential organs is preserved; and while this is the case, though the functions of particular organs may be partially or even wholly suspended, yet they will still continue capable, by the application of their proper excitement, of acting upon one another, and of manifesting the phenomena of life."

But leaving this question, which has no practical bearing, let us follow in the train of our author's inquiry. He lays down the following broad and characteristic distinctions between the vital and physical forces:—

"It is the peculiar province of the vital forces to carry on the rudiments of organization to a most astonishing degree of interstitial development; and to this consideration we would particularly invite the attention of the chemical and mechanical philosophers, who expound the phenomena of life by chemical and physical laws.

"The forces of physics and of chemistry produce precise and uniform results; whilst those of life are attended by an endless variety of modifications. This is, in itself, an ample proof that their essence is wholly distinct. One set of forces operates mainly upon inorganic matter, and are *not acted upon*. The other forces operate exclusively upon organized matter, and are more or less influenced by the former, and are acted upon by foreign causes.

"The former are always the same under all circumstances; the latter exist in distinct modifications of kind according to the varieties of texture which they animate, and they are constantly modified in their nature by an almost endless variety of foreign agents, and they may be extinguished by those agents. Their alterations constitute the essential pathology of disease. We may calculate the results of one with perfect accuracy;—we look with prophetic ken to the return of a comet through a long vista of ages. But instability is the great characteristic of the vital forces, and the exact phenomena which we may contemplate at this moment, may vanish at the next, never to be repeated. The physical and chemical forces are always operating *per se*, with entire independence, and their existence is perpetual as their nature is unchangeable. The vital forces, on the contrary, generally produce visible actions only when they are acted upon, and the mind itself is one of the agents. They become more or less passive the moment those influences are withdrawn, and they may be extinguished in a moment by those influences. They have a specific final cause, which appertains exclusively to organized matter. This final cause which consists in carrying on the processes of life, has a natural end, when the vital forces become extinct, and give place to the full operation of the forces of chemistry. The latter, then, lay waste what had been the work of the former, and thus prepare new materials for the complex process of ultimately fitting them for the work of the vital forces in other animated beings." P. 30.

As a practical remark, deducible from these important distinctions between the powers of living beings and those of inorganic nature, we would point to the following:

"The whole art of medicine consists in producing certain impressions upon forces that are wholly unlike those of chemistry and physics: and he would be considered mad who should talk of modifying the operation of galvanism, magnetism, chemical affinity, gravitation, &c. by an emetic or cathartic. It must come to this, if you will have it, that those forces preside over organized matter, and, perhaps, even if they be allowed to have a subordinate agency." P. 32.

We now arrive, in the second section, at a review of the chemical theories of Berzelius, Prout, Billings, and others; next, at an exposition of what our author considers the fallacy of the galvanic theory, instituted by Dr. W. Philip, for explaining the manner in which chemical forces are supposed to find their way into those minute vessels in which the vital forces hold their peculiar empire; and, at length, at an examination of the theory of *catalytic forces*, first advanced by Berzelius for explaining certain phenomena in physics, and which has lately been employed in accounting for certain organic actions.

"A very plausible hypothesis, and the best we have seen, has been projected by those who profess not to subscribe fully to the usurpations of chemistry to account for the results of vital processes upon other principles than the forces of life. This is by what Berzelius calls the *catalytic forces* and *catalytic actions*. Still, it is nothing but the chemical doctrine practically applied.

"When a jet of hydrogen falls upon spongy platina, it is said the platina determines combustion and the formation of water. So does iridium and other substances, without entering into combination with the new-formed products. It is also said, that 'at certain temperatures, iron disunites the elements of ammonia, but does not combine with them.'—Analogies are not uncommon. Now, this is carried up by way of analogy to the living vessels and pores of animals and vegetables, as if there was a complete resemblance betwixt the properties of spongy platina, iridium, and a heated gun-barrel, and those of arteries and excretory vessels." P. 55.

"To explain all the variety, and all the precision in the new or modified products, upon catalytic principles, it would be necessary to suppose that almost every vessel in the organized system has a peculiar chemical endowment; that in one it is analogous to the property of 'spongy platina,' in another to a heated 'gun-barrel,' and so on, *ad infinitum.* Nay more, that in many parts, as in the liver, each capillary vessel should be endowed with a multitude of catalytic forces specifically different from each other, since the new formations are multitudinous. But this is manifestly absurd." Page 57.

The galvanic theory is disposed of with much less deference than the one just noticed. "The hypothesis as to galvanism is only a display of ingenuity, or a cloak for ignorance. There is not one good fact to sustain it. Try it upon any part of the blood, or its various parts in any state of combination—in tubes of the most cunning contrivance, and it will always turn out like the pihlosopher's stone. Nor is there a shadow of reason to suppose that galvanism is generated in any part of the higher order of animals. No analogy can be derived from the torpedo, &c., for reasons which we have stated in another place. Upon what plausible ground can Dr. Prout and others defend the assumption that the liver, pancreas, stomach, &c., form together a galvanic battery? Is there any greater similarity in their physical relations to each other, than between the mill-stone and the hopper? or do they present a single phenomenon which is remotely analogous to electric operations? There is nothing offered but general assumption. The electric current has never been detected in the nerves, or in any other part. Whenever specifications are attempted, as we shall variously show, it is conceded that even analogy wholly fails. If digestion be promoted by galvanism, it is evidently in virtue of its properties as a stimulant to the vital forces. Besides, has it been considered what an enormous quantity of the galvanic fluid would be necessary for the purposes of digestion, and the formation of the various secreted products, especially when rapidly augmented, as in weeping, &c.? Should we not try this question by the trifling results, in the way of decomposition, which are obtained from a galvanic battery, whose power is immeasurably beyond any thing which can, with reason, be imputed to the animal body? Moreover, it appears to be absurd to suppose that galvanism or any other chemical agent would operate with undeviating uniformity in particular parts, and never bring about the same results in other parts where the same fluid is the substance acted upon." Page 63.

Having now passed in review the various theories to which we have alluded, our author thus sums up his argument against them.

"Since, therefore, neither the catalytic forces, galvanism, nor any chemical agent or force will explain the results of life, its processes must be perfectly *sui generis*. It is admitted by the chemical theorists, that all 'the changes differ essentially from *all kinds* of *chemical* phenomena.' Therefore, it is an irresistible inference that the forces which determine the changes 'differ essentially from all kinds of chemical' forces. The vague resemblances which exist, and the disposition to explain all phenomena by some universal rule, have led to this invasion upon the institutions of nature. The whole material world is connected together by analogies; but the rule which would refer the products of organized beings to the agency of chemical or physical forces, would make man a plant, or a vegetable a stone. If we infer the dependence of organic products upon chemical forces on account of the nature of their composition, it might be equally argued, that the whole phenomena of life depends upon physical laws, because the instruments of action are constituted upon mechanical principles." Page 71.

The remaining section of this essay is for the most part taken up with an attempt to show that the essence of life is distinct from matter, —something analogous to the soul, or "intermediate between spirit and matter." His principal argument in favour of this hypothesis he deduces from that law of regular gradation, which many philosophers pretend to discover in the orders of creation; a law which, by the way, has been disputed by the most learned and able naturalist that the world has, perhaps, ever produced. Dr. P., however, attaches but little importance to the opinions which he advocates in this section. He admits them to be hypothetical, and as such we must leave them, and proceed to other and more important considerations, which his subsequent essays furnish in abundance.

PHILOSOPHY OF BLOODLETTING.

IN this essay, consisting of fifteen sections, Dr. P. has undertaken to illustrate, by a theory of his own, the local and constitutional effects of bloodletting both in health and disease, following these out to their consummation in syncope, but not to those ultimate influences which depend on diminution of fibrin, except so far as these may illustrate his theory. He also attempts, by the same means, to explain the modifications in the primary effects of bloodletting according to the different modes of abstracting blood; and to lay down the indications for the loss as a remedial measure. Much of the essay is taken up in criticising and commenting upon the practices and opinions of some of the principal authorities in the profession; it abounds in references to the writings of medical men of every age and nation; and touches incidentally upon the pathology and treatment of many important diseases.

Following up the ideas which we have found our author advocating with so much spirit in the first essay, we here at the onset find him denying that the mere mechanical diminution of the circulating mass can have any thing to do with the primary effects of bloodletting, and maintaining that these effects take place purely in virtue of the direct influence of the remedy upon the vital forces.

Deferring, for the present, his account of the influence of the nervous system in modifying the effects of bloodletting, he takes up the consideration of these effects, first, as they are manifested in the healthy subject; remarking, however, that the principles are the same in disease, though some of the direct manifestations may be different. We must allow him to expound his philosophy in his own way — and first, in reference to leeching.

"In the first place, we suppose the earliest effect of bloodletting consists in a contraction of the blood-vessels. That in leeching, this contraction begins in the extreme vessels of the part, which soon involves, by sympathy, those in the vicinity; and what is especially important, such as may be the seat of disease, when leeches are applied to the part inflamed, or in its immediate neighbourhood. This contiguity, however, as will appear, is not always necessary to the immediate impression. It may happen, as we shall endeavour to explain upon a similar principle somewhat modified, when the affected part is remote from the place of leeching. By the same principle also, the capillary series, which possesses in all parts an organization and function more or less alike, becomes involved in like manner throughout the system. The larger vessels, sooner or later, participate in this contraction, and by reacting sympathy, increase the artificial affection of the extreme vessels. But such is the sympathetic relation betwixt the extreme vessels and the heart, that in many susceptible constitutions, or from peculiar conditions generated by disease, the impression induced upon the *vires vitæ* of the extreme vessels that are under the primary influence of leeching may be propagated directly to the heart, as well as through the mere direct channel of sympathy, of which we have just spoken. It is obvious, therefore, as will be farther shown when we speak of the operation of general bloodletting, that the whole system, under these circumstances, will be more immediately placed under the full influence of the remedy, and less blood will be required than when the effect is propagated mainly along the extreme vessels, the capillaries, and the larger series.

"The foregoing effect is originally exerted in the larger vessels and the heart through the united laws of continuous and remote sympathy, but chiefly by the latter as it regards the action of the heart." Page 125.

It is not difficult, he adds, to comprehend how the foregoing laws are concerned in leeching, when we consider that very trifling inflammation of the skin or other parts, may derange the general system through the same laws. Next, in relation to venesection, he proceeds —

"In general bloodletting, or when a large vein is opened, the effects are varied, and in a way of practical importance. The first impression is simultaneously in the large and small vessels. A contraction takes place directly, through the impression exerted upon the vital forces, from the diminution of the volume of blood, — that of the smaller vessels increasing in a greater ratio from their greater sympathy with the larger, and their greater endowment with the vital powers. The contraction of the extreme vessels, therefore, grows out of a double influence — that which is exerted by the direct impression of the remedy, and that which proceeds from the change in the larger vessels, and which is propagated through the principle of sympathy. But the impression thus made upon the extreme vessels reacts in its turn upon the larger vessels, till a circle of complex influences becomes established. For the foregoing reason, however, the alarm, from the beginning, is felt most sensibly by the extreme vessels and capillaries, and their contraction, from the beginning, is wholly the greatest. This contraction increases, also, in an increasing ratio as the blood flows from the vein. The phenomena of course are more or less modified by constitution, &c.; but the same laws prevail in all cases. In leeching, on the other hand, the contraction of the large vessels is wholly at first, and mainly afterwards, consequent on the impression upon the extreme vessels and capillary arteries, and is purely the result of vital action. In general bloodletting, this contraction is only in part, though mainly of that nature.

"Simultaneous, therefore, with this beginning contraction, is a modification (or, if it be preferred, an excitation) of the vital properties of the capillary arteries, of which their greater contraction afterwards, till syncope begins, is chiefly the consequence. Since, also, these changes may commence at the very onset of the remedy, the amount and rapidity of the primary change, when clearly the *result of the loss of blood*, will depend on the suddenness with which the blood is abstracted." Page 126.

After this account of what he characterizes as the earliest effects of bloodletting, he goes on to explain the manner in which, according to his theory, syncope is induced. "The next link in the series of changes," says he, "is the beginning failure of the heart's action." We cannot enter upon his arguments to show that this does not arise from the mechanical diminution of the amount of blood, which however he admits to be an important step, yet still a secondary step, in the process of cure; but proceed to give his own opinion. "Syncope, therefore, when it is induced by the *loss of blood*, is a test that the vital powers of the extreme and capillary vessels have been strongly affected. Like the contraction of those vessels, it is one, though a less simple, consequence of that affection.

"We infer, also, that the failure of the heart's action from loss of blood depends, primarily, (with the exception of a concurring cause to be hereafter stated,) upon its sympathy with the change in the extreme and capillary vessels, and the blood which has accumulated about the centre of the circulation." Page 131.

Having now disposed of the effects of bloodletting in healthy subjects, let us see how these effects are modified by disease.

"The ratio in which the various phemomena succeed each other in disease, will, of course, depend on the condition of the vital powers, especially such as belong to the heart and blood-vessels. We have often the clearest evidence, that a corresponding susceptibility pervades the whole sanguiferous system; and when this exists under a certain modification, the obstruction of a very small quantity of blood may almost instantly determine a paroxysm of syncope. At another time, under a different modification, depletion may be carried to a surprising extent, even to eighty, ninety, or one hundred and twenty ounces, without inducing the paroxysm. Although a certain contraction of the vessels necessarily follows this great loss of blood, it may even be in these cases, mostly from the mechanical cause, and the elastic property of the vessels, and that the contraction of the small vessels is mainly in the ratio of the diminution of the volume of blood. There has been no strong impression made upon the *vires vitæ* of the extreme vessels, and therefore, they sustain a diminution of their contents in proportion more corresponding with that of the large vessels, and the amount of blood actually received from the circulating mass. Thence, disease either remains more or less unsubdued, or the vital powers, ultimately feeling the loss, take on a new action, disease abates, and as one of the consequences, in inflammation, the instruments of morbid action contract and expel a part of their contents. Thence, also, in such cases, no great sympathetic influence will be exerted upon the heart, during the application of the remedy, and no preternatural quantity of blood determined upon that organ; but having less blood to move, the heart may act even with greater force, till the more vital contraction commences. Thence also, is it in part, if local inflammation exists in these cases, and depletion be not carried to the point of syncope, that the increased force of the circulation often restores the plethoric state of the vessels concerned in the morbid process. But a greater cause exists in the failure of the remedy to impress the vital forces in such a way as to establish their alteration.

"The diminution, therefore, of the volume of blood in the inflamed vessels is a very remote effect of lessening the quantity of the circulating mass, or even of its abstraction from the vessels themselves. The quantity of blood, we have said, which is sometimes sufficient to overcome severe inflammations, bears but little proportion to the amount in the vessels when syncope takes place. According to computations which have been made, of the dilatation of the *radial* artery by the quantity of blood injected by the heart, (the entire quantity being two ounces,) the diameter of the vessel, which is about two lines, would not be increased beyond the twenty-sixth part of a line. But we witness very great contractions of the arteries and veins from the loss of two ounces from the circulating mass. This arises, also, during the application of the remedy, when even inflamed vessels that are enlarged to many times their natural diameter, may be also nearly reduced to their original volume. How little, therefore, of that contraction can depend upon the diminution of the volume of blood, when this amount only is taken from the general mass. Page 131.

Now, the only objection that strikes us as bearing upon the doctrine above set forth, is, that the author admits two distinct manifestations of the contractile power, and both of them independent of the nervous influence; the one, a mechanical contraction depending on elasticity; the other, a vital contraction; and both of them essentially inherent in the vessels. Is it, to say the least, improbable, that the latter contraction is in all cases determined by the direct influence of the nervous fibrillæ supplying the vessels, and which we have reason to believe are as much affected by the loss of their natural stimulus as the vessels themselves? This objection will apply as well in the morbid, as to the healthy condition. The nervous influence is as much exalted, during inflammation, as the arterial action; it is, indeed, difficult to excite inflammation in parts not liberally supplied with nerves, even though their vascularity be very great; and it may be quite as difficult by the abstraction of blood alone to impress the nerves and modify their influence, when morbidly excited, as to diminish the calibre of the arteries. We do not see that our author meets this objection, while treating in a subsequent section, on the agency of the cerebral system in modifying the primary effects of bloodletting. We must now follow him in his attempt to account for the direct effects of local depletion in parts remote from the point at which the blood has been abstracted, as well as for many of the remarkable phenomena appertaining to the different modes of abstracting blood. Thus —

"In respect to leeching, the contraction of the extreme vessels being produced by a direct impression upon them, and parts of the same structure and function, being most disposed to sympathize with each other, especially when existing in continuity, the influence of this change in their vital powers, *cæteris paribus*, will be more powerfully extended to the greater series of capillary vessels, and otherwise propagated in the complex manner already explained and more completely maintained, than when the impression is produced by venesection." "A deeper impression, under certain circumstances of the system, is made upon the vital properties of the capillaries in leeching, than in general bloodletting." Page 134.

The sympathy to which allusion is made in the foregoing passage "may be propagated not only by continuity, but by what is called remote current." Again, "the influence of leeching may be propagated along the large blood-vessels to parts in the vicinity." As illustrative of this sympathetic influence of leeching by continuity of tissue, we must quote the following example of leeching at the nasal septum for headache. "Whenever we have applied leeches to the nasal septum, abdominal disease attended the head affections. The leeches have sometimes relieved the headache, when general bloodletting, cathartics, &c. have failed, whilst the gastric derangement has also persisted. But simultaneously with the relief of the head, the secretions from the bowels improved, the tongue cleared up, and the stomach and other abdominal organs were relieved. We therefore suppose, that as in the case of leeches to the verge of the anus under similar circumstances, the specific impression of leeching the nasal septum, is propagated through the mucous membrane to the viscera of the abdomen, and that the headache is as well relieved by thus removing this source of morbid sympathies as by the more direct impression." Page 136.

Dr. P. is disposed to believe that leeching as a therapeutical measure possesses important peculiarities; that an action is produced by it, analogous to that of secretion, and that there are impressions produced upon the vital powers by this remedy, which no other mode of abstracting blood can exactly establish. Contrasting it with cupping, he observes that it owes its peculiarities to the direct impression which it makes upon "the terminating vessels which are most eminently endowed with the forces of life;" whilst, "In cupping, on the contrary, the blood is abstracted from a larger series of vessels, whose office is probably but little more than to supply the terminating series." From this and other reasoning, he infers that cupping is "more speedy in its effects," and that it appears to hold "an intermediate rank between leeching and general bloodletting."

Without attempting to dispute our author's hypothesis on this subject, it is but proper to remark, that by cupping, as it is usually performed, it is by no means clear that any other vessels are involved than such as may also be involved by leeching. It is not an uncommon incident for the bites of leeches to enter vessels of considerable size, and in this way they have been known to lead to dangers, if not even to fatal consequences.

Our author next takes up the peculiar effects of general bloodletting, gives his view of the rationale of these as contrasted with the effects of leeching, and makes some practical deductions. We cannot, however, stop to analyze these, but proceed to the third section in which he treats "of the instrumentality of the brain and nervous system in producing the phenomena which arise from general bloodletting."

Assuming that the principal use of the brain is to subserve the intellectual and instructive powers, that one of its secondary uses is to cōoperate with the ganglionic system in establishing a circle of sympathies among the vital organs for preserving that harmony of action which is indispensable to life, and that the brain may be as readily and as effectually depleted by an abstraction of blood, as any other part of the body,—Dr. P. proceeds to defend the doctrine of Dr. Wilson Philip, in regard to the controlling influence of the brain over the action of the heart and blood-vessels, particularly the terminating series of vessels. His arguments on this subject, are forcible and to the point, but we have only space for his deduction from them.

"The peculiarity of the supposed law, in respect to the brain, seems to be sustained by the experiments to which we have alluded, which prove that the nervous influence is capable of acting as a stimulant, not only to the heart, but to the capillary blood-vessels. The same influence was found to be capable of acting as a sedative upon the same organs to such a degree as to extinguish their vitality in the most direct manner. Hence, also, is the inference sustained, that the contraction of the cerebral vessels, in bloodletting, not only affects more powerfully the action of the heart, than that contraction in other parts, but that the general contraction is accelerated by the same cause: the action of the heart being thus directly and indirectly affected by the contraction of the capillary vessels of the brain.

"It is also manifest, that peculiar impressions will be determined upon the brain by the loss of blood, and thence propagated with varying effects upon other parts according to the natural constitution of each individual; the nature and extent of disease, and the sympathies it exerts, and especially whether the brain be morbidly affected and according to the exact nature and extent of the affection. These are circumstances which often play an important part in the phenomena of bloodletting, leading to syncope from an ounce of blood, when we may have calculated upon a pound or more. The effect, therefore, of loss of blood, may throw, at once, a flood of light upon some obscure conditions of disease, or upon some natural peculiarities of constitution." P. 166.

It appears, however, that other important influences are involved by the contraction of the cerebral vessels, in accounting for the effects of general bloodletting.

"It is shown by the experiments of Le Gallois, that the stomach, also, is as readily and as powerfully influenced through the brain as the heart; and this, too, appears *a priori* from the analogous effects of emotions upon the stomach." "The stomach, therefore, undoubtedly, often performs by direct and indirect sympathies, an important part in the phenomena of bloodletting, especially such as immediately precede the paroxysm of syncope. Hence, also, the frequent nausea which supervenes on the contraction of the cerebral vessels, or as syncope approaches. The same may be more or less affirmed of the intestines, which is especially denoted by the evacuations which often begin when the brain manifests its signs of influence." P. 167-8.

The following may be taken as a summary exposition of our author's doctrine on the primary effects of bloodletting: —

"It appears, therefore, from all that has been said, that the loss of blood produces its effects directly, both through the irritability of the vessels and through the nervous influence variously propagated. That in leeching, the *primary* impression is mainly upon the irritability of the sanguiferous system, involving, however, the property of sympathy; whilst in general bloodletting, the nervous influence is brought into coöperation the moment the change begins in the capillary vessels, and increases as the influence of the remedy progresses.

"When syncope arises from the depressing emotions, or from other causes whose primary impression is upon the brain, the action of the heart appears to be directly prostrated through the nervous influence, and indirectly by its sympathy with the stomach; whilst a certain depressing effect is exerted by the nervous power upon the extreme and capillary blood-vessels, and an influence from this change is propagated to the heart. The succession of changes, then, as respects the heart and blood-vessels, is directly reversed; the contraction of the capillary vessels being consequent on the failure of the heart's action. We must also explain, in the foregoing manner, the syncope which follows blows upon the stomach, the crush of limbs, surgical operations, &c.; and when death is *suddenly* produced by any of these causes, it is either owing to a sudden extinction of the cerebral powers, or to a powerful determination of the cerebral influence upon the heart, by which the action of that organ is arrested." P. 174.

Dr. P. maintains, contrary to the generally recieved opinion, that in syncope, the action of the encephalon, instead of being suspended, is actually increased; that the influence of this organ upon the heart, during syncope, instead of being arrested, is exerted with greater force; and "that syncope does not depend on the sudden abstraction of blood from the brain, except from the failure of the heart's action." "That the essential changes, too, do not depend on the abstraction of blood from the brain," he says, "is seen by suddenly obstructing the transmission of blood through the carotid arteries, when no derangement of the cerebral functions will take place." P. 172.

Now, we have seen this sudden obstruction of the blood through the carotids practised, and the effect was instantaneous, and exactly the reverse of what our author states. True, we have, in many instances, seen the carotid secured on one side only, without sensibly affecting the functions of the brain. But in the memorable case upon which Dr. Mott took up both vessels at one sitting, the functions of the brain were instantly and profoundly affected. We have a lively recollection of the case; the application of the ligature to the right carotid produced no sensible effect; but on tightening the ligature upon the second vessel, the patient, after a sudden convulsive movement, swooned away. The ligature was loosened, he revived: it was tightened a second time, and again the same symptoms ensued, and continued until the ligature was loosened a second time. After a few moments' delay, it was tightened for the third time, again the patient swooned; but after a few minutes, he revived sufficiently to open his eyes; the ligature was now permanently secured, — the patient never rallied He continued for twelve or fourteen hours in a condition of profound cerebral oppression, and then expired.

It is no argument in favour of the statement made by our author, that these effects do not follow in cases where an interval of some days occurs between the applications of the ligatures. For, after interrupting the circulation through the principal vessel on either side, it is soon reestablished by means of the collateral vessels; so that when the other carotid is secured, the second operation may be attended with results neither more nor less serious than the first.

With respect to the proposition, "that the influence of the cerebral action in the heart, instead of being diminished, is actually increased during the loss of blood, or when the passions are exciting causes," and "at the moment of syncope;" we have but to remark, that such may be the case, when syncope is the result of moral emotions, or even under other circumstances; but it is difficult to conceive how this influence can be increased when the circulation is suddenly arrested in the brain, as in the case to which we have just alluded.

Having now given the full developement of his principles, Dr. P. proceeds in his fourth section to prove that the effects of bloodletting are purely vital: and in the fifth, to explain, in accordance with his own doctrine, why the abstraction of a given amount of blood should be attended with consequences so remarkably different in different individuals, and even in the same individual under different circumstances. The sixth is a short section, showing how the sensible properties of the vital fluid may be suddenly altered, even during the operation of bloodletting, by the impression which this operation effects upon the vital powers through the joint agency of the capillaries and the nervous system.

In the seventh section, he enters into an exposition of the effects of bloodletting in venous congestions, and other states of the system in which this operation may be called for, but in which syncope may be induced from the slightest loss of blood. We would willingly dwell upon these important investigations; but our quotations are already numerous, and we are obliged to proceed to the eighth section, which is devoted to the inquiry, "Why is a second or third bleeding often better borne than the first?"

"The first bleeding lessens the irritability of organs not directly concerned in any local disease, and thus diminishes their susceptibility to the loss of blood. It diminishes the sympathetic influences which have been exerted on the heart and capillary blood-vessels. In the sinking states of venous congestions and congestive fevers, it so modifies the powers of the capillary system, that its tendency to contract is counteracted, and restores in some degree the balance of the circulation, by which less blood is accumulated about the centre. And when it more rarely happens in simple inflammation, that the tolerance is increased by the first bloodletting, it appears to be chiefly owing to the former causes." P. 210

In the ninth section, Dr. P. enters into a review of the doctrine of Wardrop, Hall, and others, who have taught that when syncope follows bloodletting, it is a "uniform criterion of the quantity of blood which the nature of the case may at any moment demand." His arguments against this doctrine are forcible and just: and we commend them to the consideration of those professors and practitioners who are in the habit of trusting the bleeding of their patients to barbers and other untutored men — a practice which we were not long since surprised to hear publicly advocated and recommended in a lecture before a class of students in one of the most popular medical schools of this country.

In the tenth section, Dr. P. treats of the indication for bloodletting, as drawn from the state of the pulse. We can safely appropriate our author's general views as here set forth; but we fear that some of his incidental remarks are open to objection. If we might venture upon an opinion, it is that he makes the abstraction of blood far too much a matter of course.

"It is a rule," says he, "very often urged upon us, after surrounding the remedy with every variety of precaution, to avoid the abstraction of blood where we have any doubt as to its propriety; whilst the patient is left entirely at the mercy of cathartics, emetics, &c. A different practice has obtained with us, and we have rarely had any reason to regret it. If we have had doubt as to the utility, and especially to the possible injury of any active internal agent, we have delayed it till the indications may have become more distinct. But if, after surveying the whole aspect of a case, we remain in doubt about the propriety of abstracting blood, we generally take out our lancet and bleed the patient. We would not, however, leave this subject, without saying, that in these doubtful cases, the symptoms are supposed not to preponderate against the remedy." Again:

"We have long since too, come to the conclusion, that it is safer to put this 'two-edged sword' into the hands of the ignorant or the imbecile, or those who make a trade of the profession, than to forever blunt its edges, so that it will not cut, before it be trusted to their uses. We everywhere see victim after victim sacrificed to timid admonitions, and worse example: whilst you, and all of us know, that it is a rare phenomenon that a patient is slain, seldom injured, by the lancet." P. 238.

Our author in these remarks has, doubtless, much truth on his side; and we have no question, that in his own hands this 'two-edged sword' is as safe as it is efficacious; but not so with all. And those who, like ourselves, have known nervous and delicate women repeatedly bled to exhaustion for paroxysms of hysteria, the remedy, of course, aggravating the disorder, and inducing its more frequent recurrence; who have known puerperal women bled until scarcely any more blood was left in their veins, for supposed symptoms of peritonitis, the disorder, in the mean while depending, for the most part, on a naturally irritable temperament; the practice itself inducing that state of anemia which Hall has well characterized under the name of "sinking," and which endured for many months; who have known the lancet employed without mercy in the state of collapse subsequent to severe injuries; and who have more than once known patients to die outright by exhaustion from loss of blood, after surgical operations; will not be willing to acknowledge, that it is a "rare phenomenon" for a patient to be slain, or even to be injured, by depletion.

In the eleventh section we have our author's views in relation to the effects of excessive loss of blood. He does not deny the occasional occurrence of what has been called "Irritation and Excessive Reaction from Loss of Blood;" yet he is disposed to question the correctness of Dr. Hall's opinions in respect to the pathology of these morbid conditions. He by no means admits that this irritation or excessive reaction, which is said to simulate inflammation, and yet to be incompatible with it, is, when thus simulating inflammation, any thing else than inflammation proper. As such, too, he treats it; but always with reference to the condition of the general system. The arguments and reasoning of Dr. P. on this subject are urged with his usual force, and after criticising the hypothesis of Dr. Hall, he attempts to show that all the useful portion of this author's doctrine respecting the excessive loss of blood, may be found in the writings of his predecessors, particularly in those of Hunter.

The twelfth section is taken up with the practical application of bloodletting. In this Dr. P. shows but little favour to those who, fearful of the ill effects of this remedy, would substitute antimony and other depressing medicines in the treatment of inflammatory diseases. While speaking of pneumonia, he thus alludes to the numerical system of M. Louis:

"The system of counting belongs to abstract inquiries, and appears not more likely to ensure those just conclusions, at which its author aspires, than a similar practice, which sometimes obtains amongst jurors determines a just decision. The plan is exclusively empyrical, and shuts out the understanding. It takes not into account, either pathology, the remote causes which so constantly modify diseases, the complications of disease, the combined influence of associated remedies, sex, age, constitution, habits, malpractice, &c. Particulars may be rendered of individual cases; but this is only the former philosophical method. It affects not the great numerical amount. The rest is an encumbrance, a canker." P. 306.

Passing over the thirteenth section, in which we have a notice of the most important authorities, both ancient and modern, in favour of our author's practice; and over the next, which is taken up in showing the great importance of free depletion in some of the diseases of infancy and of old age; we find ourselves in the concluding section, which is devoted to the subject of bloodletting in the treatment of apoplexy.

In the management of this disease, Dr. P. is more cautious in the use of the lancet than in almost any other. The following remarks are to the purpose, and will illustrate his practice:

"When bloodletting is of doubtful expediency in apoplexy, and this is commonly soon after the seizure, in cases that admit of relief, the abstraction of blood should advance slowly, and its influence be carefully observed. The result, from a small quantity, may be such a relief to the brain, that its pernicious influence may be so withdrawn from the system that the remedy may be soon repeated, and to a greater extent.

"Having brought the system, in bad forms of the disease, out of its alarming prostration, either by moderate stimulation or cautious bloodletting, or by trusting it to its own resources, &c., it will become important to estimate the probable extent of disease in the brain and other organs."

He gives the following as his views of the pathology of apoplexy:

"And here we cannot but express our strong conviction that sanguineous effusions within the craniums are generally the result of disease, and that they very rarely depend upon any primary rupture of bloodvessels. Dissections prove that this condition of disease in almost all cases, is constituted by venous congestion. This view of the pathology, whilst it is entirely more inauspicious to the hopes of the patient, than that which regards the effusion as the simple result of a ruptured vessel, requires more energetic means than the latter. Indeed, were simple rupture the source of the effusion, we see not in what respect art is likely to be instrumental. It cannot be, as is commonly supposed, by diminishing the force of the circulation, that we obtain much ascendency over the complaint. Indeed, in many cases where the pulse is prostrated, relief is effected whilst the energy of the heart rises under the influence of the lancet. The philosophy of the effects of this remedy mainly relate to its impression upon the vital forces of the capillary vessels.

" Bloodletting, too, is never known to arrest those hemorrhages which arise from the division of vessels; whilst, on the other hand, as effusion advances, the laceration of the capillaries that are engaged in the morbid process of sanguineous excretion, explains the reason why cerebral hemorrhages are generally small, the excretory action being thus extinguished." P. 359–60.

Dr. P. takes up the question of cerebral hemorrhage again in one of the appendixes attached to this essay, and treats it with uncommon logical acumen.

We cannot close our notice of this valuable treatise on bloodletting, better than by quoting the general propositions which terminate it.

" From the considerations which have been offered in the foregoing sections, we arrive at the following general results:

" 1. That bloodletting produces its direct and efficient impression upon the *vires vitæ* of the capillary blood-vessels by modifying their action.

" 2. The quantity of blood to be removed relates directly to that impression.

" 3. Its most salutary effect will, therefore, consist in its nearest approximation to a full, but just impression upon the *vires vitæ*.

" 4. To produce and maintain this impression, will require the abstraction of a certain quantity of blood in every case, the measure of which will be the antecedent and resulting symptoms.

" 5. Bloodletting may add to the violence of disease by coming short of that impression; or it may equally injure, if carried to excess, and may even induce new inflammation.

" 6. Its local, and sometimes its general application, is remedial when inflammation is induced by excessive bloodletting alone.

" 7. Bloodletting may be a remedy for other diseases than inflammation.

" 8. It is equally safe at all periods of life, is most indispensable in old age, though not less important in many diseases of infancy.

" 9. If employed as a prophylactic, on passing from northern into tropical countries, it must be with such modification as shall not increase irritability; and then only in the plethoric or robust.

" 10. General bloodletting, cupping, and leeching, operate upon common principles, which are more or less modified in each mode of abstracting blood. Cupping is intermediate in this respect betwixt general bloodletting and leeching.

"11. General bloodletting is wholly a more important remedy than leeching; and whilst cases constantly arise in which the latter cannot be substituted for the former, there are numerous instances in which general bloodletting cannot take the place of leeching. Cupping will sometimes answer the purposes of either, and may be better.

"12. The brain has a peculiar allotment in the effects of bloodletting; and inflammation of this organ will generally sustain a greater loss of blood than any other. There are peculiar conditions of this organ, however, as in some cases of mania, delirium-a-potu, and especiallly apoplexy, in which, on account of the relation of the nervous influence to the organic forces, and the manner in which that influence is determined by bloodletting, the abstraction of blood may be either inadmissible, or must be practised with great circumspection.

"13. Spontaneous hemorrhages, occurring at adult age, should not be restrained, unless manifestly proceeding to excess."

THE HUMORAL PATHOLOGY.

We would willingly enter upon a minute examination of the remarkable and highly erudite essay with which this volume closes; but the discursive manner in which the subject is treated, forbids us; and we are furthermore forced for want of room to confine ourselves mainly to a notice of its most striking and important features.

Dr. P. sets out with the full conviction that humoral pathology has no foundation in nature; that in all its guises, whether of ancient or modern date, it is essentially the same delusive show, continually perverting the true principles of medicine, and leading those who would look to it for light continually astray from the path of truth. He claims to be an exclusive solidist; but holds that the humoralists have no reason to find fault with him for exclusiveness.

"We therefore protest, once for all," says he, "against any charge of exclusiveness from the opposite party. 'Let the beam be first cast out, &c.' We are perfectly content that our opponents should take this ground whilst they can maintain it — that they should be 'aut Cæsar aut nullus,' and we do not complain that they have no fellowship with solidism. We shall, therefore, on our part, occupy the same position; and, with this fair understanding, shall endeávour to show that humoralism has no foundation in nature." P. 388.

With this free declaration of his principles, he declares a war of extermination against the whole school of his opponents from Galen downward, even to the last, though not, perhaps, the least noted of them, Magendie and Stevens. Against this latter writer, he is, indeed, more than usually severe, and with what reason, may be seen by the following, and numerous other similar passages.

"The work of Dr. Stevens having been especially instrumental in propagating the humoral doctrine, and much of its importance reposing on his saline treatment of fever, we shall state at the outset, that this gentleman first bled and gave calomel or castor oil, but attributed the whole credit of cure to the saline draughts that were employed towards the decline of the disease." P. 402.

Again, in alluding to this writer's account of the colour of the blood, as indicative of the premonitory stage of marsh fever.

"Dr. Stevens brings forward a case where he 'bled a sickly looking sawyer, who was working in a marsh, and who had most of the premonitory symptoms' whicha istinguish the foregoing fever, to prove by the 'peculiar appearance of the blood' at this stage of the disease, that the sanguineous lesion had been the cause of the premonitory symptoms. So, also, Dr. S. bled a patient in this city, and arrived at the same conclusions. The subject had been supplied by Dr. Ludlow, who informs us that he broke out with the eruption of scarlet fever on the same day." Page 428.

But though Dr. P. at the commencement of this essay, declares himself the strenuous advocate for exclusive solidism, yet the tenour of his doctrine would lead us to believe that his solidism is of that qualified kind, which can contemplate a disordered condition of the whole body, including both fluids and solids; the former, however, taking their morbid impressions, in all cases, from pre-existing disorder of the solids. Thus, in speaking of the appearances of the blood in intermittent fever, which undergoes various changes with the varying condition of the solids, he remarks:

"Still we have not the least doubt, that the natural condition of the blood is altered in this disease, as it is more or less so in all constitutional fevers, and in very many local affections. It would be unphilosophical to suppose it otherwise. But we shall never reach the difficulty, as we shall farther endeavour to show, by agents addressed to the blood itself." Page 444.

He even admits that the blood may be disordered by intermixture with morbific and therapeutic agents that enter the circulation, always subsequent, however, to a primary morbid action of the solids; as may be seen by the following question, which he puts to himself for the sake of his reply.

"But do you deny that deleterious substances are sometimes taken into the circulation through the alimentary canal? — certainly not. We deny nothing that has been reasonably shown. But when such agents, with marvellous rarity, are taken into the circulation, it is clearly in virtue of some modification which they previously establish in the vital properties of the absorbing vessels." Page 549.

Let us now see how this view of solidism will tally with the exposition of the doctrine as set forth by others of the same sect. We will refer to Dr. Chapman, the distinguished professor in the University of Pennsylvania. "The theory I shall propose of the operation of medicines," says Dr. C. "alleges, that they all act by exciting a local impression which is extended through the medium of sympathy. By many, however, it is still believed, that certain articles, at least, enter the circulation, and produce their effects in this way. This latter hypothesis, is evidently a relic of the humoral pathology." (Chapman's Therapeutics, Vol. I. p. 60.) — Our author's ground is a safer one than this; but as we have already intimated, it does not appear to us to be the ground of exclusive solidism.

Nor yet does it appear to be the ground of vitalism proper; for his principal arguments against the humoral pathology, are founded on the assumption, that, if morbific agents enter the blood, they can effect it only by mechanical intermixture; and consequently that when a train of morbid action is established in the solids under these circumstances, it is not the blood itself, but the morbific agent mixed with it, that causes the disease. Thus says he,—

"It is indifferent to us, at the present moment, whether the poison is circulating with the blood, or operates from without. In either instance, it is the poison, not the blood, which produces the disease." Page 481.

Again, in speaking of poisons in another place,—

"They relate strictly to the *vires vitæ* of the solids, and they appear to us to have no conceivable connection with the blood, unless they be sometimes mechanically intermixed." Page 498.

Now, if we admit the blood to be a living fluid, (and our author freely makes this admission,) we see not how it can be maintained that morbific agents, after entering the circulation, can have "no conceivable connection with the blood," other than that resulting from mechanical intermixture. The blood being a living fluid, must be susceptible of morbid impressions; and morbific agents intermixed with it, must, as it appears to us, be capable, by their direct impression, of modifying its vital properties. Our author, towards the close of his essay, seeing the force of this argument in favour, not of humoralism proper, but of that exclusive vitalism, which can admit that living matter in all its forms, whether fluid or solid, is susceptible of direct morbid impressions, has attempted to get over it; but with what success, it is difficult to determine. We would give the whole of his arguments on this question, if they could be easily condensed; but as they cannot, we must refer our readers to the book itself.

Finally, if we have a correct conception of our author's doctrine, it is not that the blood is insusceptible of disease; for, says he, "There is an ever varying adaptation of the state of the blood to the varying condition of the solids, and this is brought about by the solids themselves. It proceeds, *pari passu*, with the changes of the latter." Page 649. Nor does he deny that morbific agents may occasionally enter the circulation, as we have shown by a previous quotation. But his peculiar ground, and that which he labours most earnestly to maintain, is that when the blood becomes disordered, it is in virtue of some modification previously established in the vital powers of the solids. His own words to this effect, we have already quoted: we may also refer to the following passage:

"Finally, as it regards the absorption of foreign substances, which are not directly alimentary, but which form component parts of the blood, as those of an alkaline nature, and some others not deleterious, they may be more or less freely admitted into the circulation; whilst provident nature has so endowed the lacteals, absorbents, and veins, that they exclude offensive agents, or only now and then admit them sparingly, *after those agents shall have established an alteration of their vital properties.*" Page 575.

This doctrine will, no doubt, hold good, in reference to many poisonous substances; but we are not yet prepared to admit, that morbific agents entering the blood, must, in all cases, exert a direct morbid influence upon the vital powers of the absorbents or other vessels through which they are received. Many substances are capable of exerting a morbid impression on one particular portion or tissue of the body, whilst to another, they are harmless. And is it, to say the least, improbable, that many articles taken up by the absorbents, may have no direct morbid influence upon those vessels? and yet after entering the circulation, that these same articles may exert a deleterious influence upon the vital properties of the blood, of the nervous system, of the heart, or of any other organ or set of organs to which they may afterwards be distributed? And again, admitting that the vital powers of any given organ may have been thus impaired by the influence of a morbific agent, conveyed to it through the blood; is it not further possible, that the circulating mass may be subsequently restored to its natural condition, through the agency of the organs instituted by nature for that purpose, and before the diseased organ may have time to involve the sympathies of other parts, or induce a constitutional disease?

To state then, that the absorbents cannot in any case act upon morbific matter and carry it into the circulation, independent of a previous and necessary derangement of their vital powers, appears to us just as reasonable as to say, that no form of poison can be taken into the stomach without previously, and by a direct impression, impairing the vital powers of the organs of deglutition.

But we are dwelling too long upon what appears to us to be the weakest portion of this memoir; and we are leaving unnoticed the vast amount of learned research, of well digested argument, of sound deduction, of important practical suggestion, everywhere scattered throughout its pages. To these we have not now time to turn; they will be seen by every reader.

In conclusion, we would recommend the study of these volumes to the profession. Few medical men, even amongst our most learned and experienced, can peruse these essays, without benefit, or without receiving information that may be of avail to them in future. We know of but few works, and certainly none in the range of American medical literature, to compare with this, for the extent and variety of professional research evinced in it. Finally, the mechanical execution of the work is creditable, and has cost the author a serious outlay of money. We trust, therefore, that on this score, he may be indemnified, if not remunerated; and that the profession will come forward to the encouragement of a work that does honour to the medical character of our country.

J. W.

(To be continued.)

Elements of Pathological Anatomy, illustrated by numerous Engravings. By Samuel D. Gross, M. D., late Professor of General Anatomy, Physiology, and Pathological Anatomy, in the Medical Department of the Cincinnati College. 2 vols. 8vo. pp. 1028.

Part II.

In a former number of this Journal we offered our readers a brief notice of the first part of Dr. Gross' work containing the "General Principles of Pathological Anatomy." We propose now to enter into a more detailed examination of the second part, or "Special Pathological Anatomy." This portion of the work embraces 27 distinct chapters, devoted to the consideration of the anatomical changes of an equal number of distinct organs and tissues. This arrangement, although not strictly scientific, is yet sufficiently comprehensive and convenient for reference. Each chapter is also prefaced by a brief history of the normal structure of the tissue or organ under consideration, an arrangement which adds very materially to the usefulness and completeness of the work.

The first chapter is devoted to the pathology of the *blood.* This fluid, which from its great importance in the animal economy, has long engaged the attention of physiologists, is still, from the great complexity of the subject, involved in much obscurity as to its influence in disease. One of the most common phenomena, the *buffy coat* of the blood, has not yet received a satisfactory explanation. The fact that it is commonly present in acute inflammations, is one of importance, undoubtedly, but far less so than if the production was uniform and its rationale understood. According to our author, in some cases of intense inflammation, the blood does not exhibit a buffed appearance until the patient has been bled several times; at other times, the reverse of this happens. Again, it will frequently happen, that the mode of performing the operation of bloodletting will influence the formation of the buffy coat in the same individual. Dr. Bellhomme of Paris, after numerous experiments, has come to the conclusion, that a narrow basin, a large orifice, and a full, rapid stream in the form of an arch, are the external circumstances most favourable for producing the buffy coat.

The immediate cause of this appearance, our author adds, is sufficiently obvious: the globules, with their colouring matter, begin to subside before the coagulation is completed, and thus the upper surface of the crassimentum is left without them. But the reason why this happens and the practical indications to be drawn from it, are not so clear. Hewson thought that the fibrin was rendered specifically lighter than the red globules, and that the blood always coagulated more slowly; but the contrary is more probably correct. Dr. Gross' explanation is the following: — "In the healthy state the fibrin is exceedingly tenaceous, and the red particles are so intimately connected with it as to render it impossible for them to subside during the coagulation, however slowly this may be effected. In inflammatory affections, on the contrary, this cohesive property is either greatly diminished or the fibrin loses its affinity for the red particles, which consequently gravitate more or less before the blood separates." This, however, is mere hypothesis, and if true, would embrace nothing practical. The result of all our author's

In certain cases, rare however, the kidneys present a marbled appearance, caused by the co-existence of the red and indurated inflamed portions with other portions in a state of anemia, but equally indurated. The red portions are commonly prominent; the pale portions more rarely so. In other cases where this marbled appearance exists, the red portions present ecchymoses, or numerous purulent points. These red portions almost always, and the pale portions more rarely, are prominent, presenting small flattened projecting points, or even a bossellated appearance. Finally, in cases of chronic nephritis, in which the acute form of the disease has supervened a short time previous to death, the kidneys have presented a mixture of hyperemia and of anemia, or a complete discolouration of the cortical substance, the external surface of which is mammillated.

Suppuration of the kidney presents different appearances, and in many cases requires a very careful examination to be distinctly recognised. In some instances, the deposits are so small as to resemble grains of white sand about the size of a large pin's head, situated in the centre of the venous polygons, and surrounded by a slight reddish-brown line, and intermingled with the red points already described, and in which pus has not yet been deposited. Commonly, however, these deposits are more distinct, being about the size of a large pustule of impetigo. They may be either scattered or grouped, or even run together, so as to form spots of considerable size upon the surface of the cortical substance. Abscesses of the size of a small nut, or even larger, may be formed, but this is rare; most of the cases that have been described as abscesses, being only collections of pus in the pelvis of the kidney. Finally, certain portions of the cortical substance may be infiltrated with pus: it is very rare for this infiltration to extend in an equal degree to the tubular portion.

Gangrene of the substance of the kidney is an extremely rare termination of inflammation. It may, however, be recognised by the black-brown tint of the fibres, the gangrenous odour, &c.

Chronic nephritis presents very different appearances from the acute form. When the whole kidney is affected its size is diminished; it is indurated and more heavy than in the natural condition. In some cases however, the reverse of this as to size is observed. The cortical substance is hypertrophied, and sprinkled with white prominent spots formed by a cellulo-fibrous structure under the lining membrane. In some cases these are larger, and of a yellowish white colour, and apparently formed by deposits of coagulable lymph of long standing.

The external surface of the kidney, which is naturally smooth and polished, becomes slightly granular, or even rough, or presents marbled spots varying in colour, form, and size.

A general or partial anemic discolouration of the kidney, commonly united with condensation of its substance, is one of the consequences of chronic nephritis. When this discolouration is universal, it can easily be distinguished from the anemia caused by hemorrhage, &c., by the roughness, or mammellated appearance of the inflamed surface. This discolouration does not commonly extend to the tubular portion of the kidney.

A general or partial atrophy of the affected kidney is another of the consequences of chronic nephritis. This can be distinguished from the atrophy which results from an arrested development, or from long continued pressure. The surface of the kidney is rough in certain parts, and the vessels which are distributed to the portions that are atrophied appear large in relation to the parts they are destined to supply. In certain cases true cicatrices exist, presenting depressions of a gray, brownish, or slate colour, to which the fibrous envelope is very closely united, accompanied by a thickening of the intermediate cellular tissue. These depressions are sometimes deep enough to reach to the base of the pyramids.

The *tubular portions* of the kidney, as a consequence of their induration, may become deformed in various ways; sometimes presenting the appearance of very acute cones, of a whitish yellow colour. The mamillæ may be infiltrated with pus, eroded, or even ulcerated.

The *external coats* of the organ often exhibit the consequences of inflammation. They become very firmly adherent to the parts affected: in the atrophy which is the result of inflammation, they become thickened, and undergo various transformations, as the fibrous, cartilaginous, or osseous, or become morbidly coloured, of a blackish or slate tint.

The vessels of the kidney sometimes acquire a remarkable size, but their inflammation appears to have no connection with that of the organ itself.

Diagnosis. The diagnosis of simple nephritis from that caused by morbid poisons, from the rheumatic or gouty form, from the granular degeneration or Bright's disease, can be better understood after a description of the different forms of nephritis. In rheumatic nephritis the urine commonly deposits chrystals of uric acid, which is not the case in the simple form: that caused by morbid poisons occurs during the course of typhoid or yellow fever, of smallpox, or of pestilential diseases. The granular degeneration is attended or followed by dropsical effusion, and albuminous urine is a constant and well marked symptom, while in simple nephritis it is of accidental occurrence and trifling in degree.

lous pus, may, with more truth we think, be regarded as a yellowish humid detritus, produced by the destruction of the middle coat of the artery, from secondary inflammation, a condition frequently noticed where the osseous plates are about to be thrown off. In some cases, indeed, the atheromatous spots are not converted into bony plates, but by the early irritation they create become converted into pustules, elevating the lining membrane of the artery, which, when ruptured, discharge a small quantity of thick, pus-like fluid, mixed with the yellowish detritus of the middle coat ; the ulcer thus formed presenting a base precisely similar to that already described as formed by the separation of the bony plate. The identity of the primitive lesions is further confirmed by the fact that the pustules frequently contain small spiculæ of bone which give to their contents a gritty feel.

As naturally connected with the chronic changes in the arteries follows the consideration of the different forms of *aneurism.* Our author describes five species, viz., the sacculated, the cylindroid, the varicose, the anastomotic, and the arterio-venous, commonly known as aneurismal varix. To these might have been added a sixth, the *dissecting aneurism*, as it has been called in the English Journals; and a case of which, with a plate, has been published in the American Journal of the Medical Sciences, by Dr. Pennock of Philadelphia. These cases are commonly described as consisting of a separation of the external from the middle coat for a considerable distance, the internal and middle coats having first given way. We have seen two cases of this form of disease ; in one, the middle coat was dissected or accurately *split* into two distinct portions, thus forming the whole of the internal surface of the sac. This dissection extended from half an inch from the commencement of the aorta to its passage through the diaphragm. The propriety of calling this form of disease aneurism, may well be questioned, but still it should have been described as an interesting fact in the pathological history of the arteries.

Another omission under this head, strikes us as equally important. No mention is made of the firm tumours which are sometimes found attached to the external surface of the arteries, and which Corvisart mistook for fibrous tumours. Mr. Hodgson was the first we believe who explained their true character by showing that they were aneurisms which had been cured.

Our author devotes a long chapter to the consideration of the morbid anatomy of the *brain.* The mere changes that take place in the brain from disease, are, perhaps, as well described by pathologists as those of any other organ. The finest minds that the profession can boast of at the present day, have entered profoundly into their study, as Lallemand and Andral in France, Abercrombie and Bright in Britain. But, notwithstanding this, the actual positive knowledge we have gained in the correct direct diagnosis and treatment of these diseases, is almost nothing. When we know more of the modus operandi of the brain in health, the numerous pathological facts we have collected, will prove eminently useful.

Among the points discussed in the present chapter, is the idea of Abercrombie, that the brain always contains the same quantity of blood, although the venous or arterial blood may predominate in different cases, thus producing *apparent* congestion and pressure of this organ ; while, in reality, nothing of the kind can happen. This idea is founded upon the assumption that the brain is entirely removed from atmospheric pressure by the nature and form of the cranium, and that the cavity of the cranium is always completely full. Our author confutes these opinions by the following statements : 1st. The brain is not completely removed from atmospheric pressure ; if it does not exist above, and at the sides of the cranium, it does below. 2d. The cavity of the cranium is not completely full under ordinary circumstances ; else, how could effusion into the arachnoid take place, or into the ventricles ? Again, the motions of the brain are seen in infants, and after injuries of the skull, attended with a loss of osseous substance. 3d. The experiments made to prove this point are inconclusive. The state of turgescence noticed in the vessels of the brain in animals after being bled to death, is also noticed in other organs (?) 4th. It is not true that the vessels of the brain retain their normal appearance where death is produced by strangulation. Our author states, that in 112 experiments of this kind, that he performed some years ago, the cerebral capillaries were every where deeply injected, the larger sinuses distended, and the vessels of the pia mater completely engorged. We are disposed to agree with him in the general conclusion, that the idea that we cannot materially lessen the quantity of blood in the head by our evacuations, is destitute of proof.

The effects of *inflammation* on the membranes of the brain, are sufficiently well understood ; indeed, they resemble in all important respects, those noticed in other organs ; but the effects of inflammation on the brain itself, are by no means so satisfactorily established. It is not uncommon to find the substance of the brain much more vascular than usual after death, indicated particularly by numerous bleeding points, when the cerebral tissue is divided by a knife : this appearance is commonly regarded as the consequence of inflammation, although in other organs simple increase of vascularity is not sufficient to characterize this state. Another point of interest to determine is, whether the state of softening, (*ramollissement*) a very common lesion, first brought distinctly before the profession by Lallemand and Rostan, is also to be regarded as the consequence of inflammation. Our author is very distinct in his assertion that it is so; but on this point we must beg leave to offer a different opinion. The remarks of Andral, (Clinique Medicale,) appear to us to place this subject in its proper position. There can be no difficulty," he remarks, "in establishing the fact that the brain in many cases first becomes injected, then softened, and finally secretes pus. Lallemand has proved this most conclusively. In these cases, the softening is one of the anatomical characters of inflammation of the brain, as it may be of the same state in other organs. But if, in other cases of softening, we do not find any appearances, either of injection, or of purulent infiltration, nothing in short but simple softening, should we not go beyond the just limits of analogy in considering this change as the result of inflammation?"

The probability is, that the form of white softening is rather dependent upon debility, or more properly, anemia of the tissue affected. Analogy, especially that derived from the study of the mucous membranes, and the fact that this form of disease is most commonly met with among aged and enfeebled constitutions, would seem to warrant this conclusion; while, on the other hand, the red softening is rarely found after the age of 45. I find but two cases detailed in Andral. The idea of Lallemand, that this condition is a form of suppurarion is still less tenable; his own cases are against it. An argument against this supposition of no mean strength may be drawn from an examination of the *causes* of suppuration and softening. The direct causes of softening, are, for the most part, unknown; while, in 25 cases of suppuration, reported by Lallemand, 17 were attributed to a blow upon the head. Again, we know that the secondary inflammation produced by caries of the petrous portion of the temporal bone causes suppuration, and not softening of the brain.

Another condition of the brain, much less common than that of softening, is *induration.* This change appears to be, at least, when partial and circumscribed, the result of chronic inflammation, and to be caused by an effusion of lymph into the tissue affected.

Cerebral Apoplexy, a form of disease, too common and too well known to require much comment, is fully described by our author. We are glad to notice that he limits the disease to its true signification, sanguineous effusion. The idea of establishing a form of apoplexy called serous, found in most of the older treatises, when symptoms formed the basis of medical nomenclature, is now less frequently recognised, although such instances may probably occur. A case was recently reported to the New-York Medical and Surgical Society, by Dr. Clark, in which the patient suddenly died, and no lesion was discovered, but an enormous distension of the ventricles with serum.

Among the causes of this form of disease, effusion from the minute vessels of the brain without rupture, and changes of the arteries themselves are mentioned. One important fact seems to us to have been overlooked, and that is the very frequent dependence of apoplexy, on hypertrophy of the left ventricle of the heart with freedom of the aortic orifice. Thus, in 17 cases of apoplexy recorded by Andral, nine presented this condition of the heart.

Dr. Gross, speaks of *tubercles of the brain*, as having been very rarely met with ; only once, in his dissections ; hence he infers, that the disease is by no means of frequent occurrence in the United States. Our own experience corresponds entirely with this statement.

Hypertrophy of the Brain, is a condition sometimes met with, of which several interesting cases are detailed by Andral, (Clinique Med.) In these, the prominent symptoms were headache, degradation of the intelligence, and finally paralysis, convulsions, &c. *Atrophy of the Brain*, an opposite condition, is more frequently noticed, occurring principally in the superanuated. Our author, in describing this condition, has omitted one important point, in the appearance of *vaccoles* in the substance of the brain, resembling those presented by the common white cheese. This appearance was first pointed out to us by Cruveilhier, at Salpetrière.

In the chapter on the *Lungs*, the student will find a very full, and for the most part, we believe, accurate account of the morbid changes those organs may undergo. Our author does not, however, describe distinctly the *lobular form* of pneumonia, as it occurs in children ; a disease, too common, have escaped the attention of so zealous an observer. He also regards the *interlobulur emphysema*, as of common occurrence, which according to our observation is not the case ; indeed, we think it not improbable, that he has confounded this condition, sometimes, with that artificially produced ; or with the more aggravated form of the true emphysema, i. e. the dog's-ear appendages.

In the section upon *tubercles*, there are several points, about which we would remark. Dr. Gross mistakes, we think, when he calls the the granulations of Boyle, tubercles. These are very rarely met with, which is indeed an argument against their tuberculous nature. But when found, they appear to us different in many respects, especially in their form and distribution. That they are found to exist in connection with tubercles, which is not always the case, is no proof of their being to the same nature.

Again, Dr. Gross is a firm believer in the inflammatory origin of tubercle. "After much reflection," says he, "and from careful and repeated examinations of tubercles in different organs of the body, &c. I am constrained to believe, that the heterologous formations (tubercle,) are originally nothing but a species of coagulable lymph, thrown out as an effort of inflammatory irritation, and modified in its character, according to the tissues in which it is deposited." But we look in vain for any argument in support of this opinion. Our author indeed quotes the opinions of several distinguished pathologists, in favour of the inflammatory origin of tubercle, but this is all. By far the best argument in favour of this view, is that of M. Andral, contained in his Clinique Medicale, but it is far from being conclusive. Indeed, those familiar with the writings of this distinguished author in the different editions of his work, are well aware that he has materially modified his opinions on this subject, since he first published them.

Every one, who has carefully studied the symptoms of incipient phthisis, must have been struck we think, with the entire distinctness of these symptoms, from those which attend all the ordinary inflammatory affections of the chest. But it is not enough to rest here. The strong argument against the inflammatory origin of tubercle in the lungs, is the *anatomical one*, into which we have not indeed now the time or room to enlarge upon; but which, nevertheless, appears to us one of the happiest results of the close attention to pathological anatomy, which marks the labour of the present time. This is certain, that we not unfrequently examine the lungs of individuals who have died of other diseases, and find them studded with tubercles in their earlier stage, without finding the least evidence of increased vascularity, or other inflammatory change in the surrounding pulmonary tissue. If it be said, that the morbid deposit having once taken place, the inflammation that produced it may have subsided. This is contrary to all known analogy; that a deposit so pre-eminently a source of irritation, not only to the part affected, but to the whole system, should frequently allow an inflammation, once capable of creating itself to subside again. We often indeed find inflammation existing around the tubercle; but this no more proves that the inflammation was the primary change, than the inflammation about a bullet, or any other foreign substance in the lung, proves it the cause and source of all the mischief we witness.

But there is another view of this question, still more direct and forcible. If inflammation either of the bronchial membrane or of the air-cells, be the direct cause of tubercles, this deposit should, certainly, have its earliest and most frequent seat in the portion of the lung, which is the seat of these inflammations. No point in pathological anatomy is better established, than that this seat is the posterior and inferior portion of the lung, as the general rule, while the primary and almost invariable seat of tubercle, is the superior and anterior portion. This argument would gain still more force, if the statement of Dr. Gross were true, that the mucous membrane of the bronchi and the air-cells, was the usual primary seat of the tubercular deposit; of which however, there is in our opinion no conclusive proof whatever. Indeed, Dr. Gross seems to us to have materially changed his own opinion on this subject in the course of the composition of his work. In Vol. I. he states, "In reference to the primitive tissues, the cellular, it seems to me, is the one in which tubercle is most usually situated." But in Vol. II. he makes quite the contrary statement. "These distinguished anatomists," speaking of Cruveilhier, Carswell, and others, "have fully decided the question which many have hitherto disputed, — that the morbid product in question, (tubercle,) is in the majority of cases secreted by the mucous tissue of the lungs, instead of being poured into the interstitial cellular substance, &c." We have already expressed the opinion that this question was not yet fully decided.

Dr. Gross makes one remark in treating of the nature of tubercle, in which we feel much interest. His observations seem to prove that tubercle is an organized subject, for he has, as he states in several instances, distinctly traced vessels into its substance. The question, whether this deposit is organized or not, has long been *sub judice*, although for ourselves, recollecting that the successive changes it undergoes most frequently commence in its centre, we could not doubt that it possessed a certain degree of vitality.

Our limits compel us to stop here, for the present, in our examination of Dr. Gross's 'Elements,' leaving the large and important classes embracing the diseases of the abdominal and pelvic viscera entirely unnoticed, but not unread. It may appear, that we have found too much fault with our author. We have purposely selected such portions of his work for comment, as contained opinions to which we could not subscribe. The great body of the work however, is impregnable, presenting an important and much cultivated science at the full period of its progress. We have no hesitation in predicting, that it will be received as a text-book in our schools, and as a standard authority among our most enlightened practitioners. J. A. S.

An account of the Yellow Fever, which appeared in the city of Galveston, Republic of Texas in the autumn of 1839, *with Cases and Dissections.* By Ashbel Smith, M. D. A. M. Ex-Surgeon General of the Texian Army. Pp. 78.

Since the appearance of M. Louis' work on the Yellow Fever of Gibraltar in 1828, the pathology of this disease has assumed new interest. In the preceding number of this Journal, we noticed the more important portions of this work, especially what relates to the anatomical lesions found in that epidemic. We have now before us another monograph on the same disease occurring near our country, and during the last year. It may not be uninteresting to compare notes, and see how far two unconnected observers agree in their conclusions. Dr. Smith had no knowledge of the opinions of Louis on this subject; his conclusions indeed evidently came as the result of his own special inquiries.

For an account of the anatomical lesions met with in the fever of Gibraltar, the reader is referred to the notice already mentioned.* It will then be recollected, that M. Louis regards *a peculiar change in the liver*, as the anatomical characteristic of the disease, that being the only constant lesion, in the cases he examined after death. It will be remembered also, that this distinguished pathologist has applied the same method to the investigation of typhoid fever, the anatomical characteristic of which he regards as an affection of Peyer's glands. Subsequent and more extended observation has not confirmed M. Louis' opinion on this latter subject, and now the first authentic treatise on yellow fever subsequent to his own, proves with equal clearness his error in relation to that disease also.

"The liver, "says Dr. Smith," was found in all cases (7 autopsies) of its usual dimensions, of ordinary firmness, and without any obvious *structural* derangement. In three cases it was of a light drab colour internally and externally, [the anatomical character of M. Louis] and destitute of blood; in one, a dark claret colour and congested with blood; in the others of its usual appearance, and containing a moderate quantity of blood. In all cases, there appeared to be a suspension of the biliary secretion; no bile could be squeezed from the substance of the liver. The bile in the gall-bladder was deficient in quantity, in some dark and very tenaceous, in others yellow and thin; in only one case was the gall-bladder distended. The mucous membrane of the gall-bladder was in one instance *intensely* inflamed."

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* Vol. ii. p. 439, this journal.

It should be perhaps repeated here, that Dr. Smith regards *functional derangement* of the liver, consisting in a total suspension of the biliary secretion as a *constant* condition of the epidemic he describes.

But that he does not regard this as the leading pathological feature of the disease, is distinctly stated. "The *mucous coat of the stomach always has presented* severe *structural* derangements; a condition which I am strongly disposed to regard as the proximate cause of the death of the individual, the *mortis ratio sufficiens.*"

And again:—"What appears to me to be amply borne out by the examinations I have made, is, that the essential pathological conditions of the stomach in fatal cases of the present epidemic, so far as these conditions are cognizable by our senses, are: first, a state of high sanguineous enjoyment of the mucous membrane of this organ, which engorgement is relieved by the formation of the black vomit; a process fatal to the vital uses of this tissue, and of course fatal to life when a large portion of it is involved. This engorgement is not a condition similar to gastritis, at least to its *common* forms. It does not give rise to the same aggregate of symptoms; it does not present essentially the same pathological appearances; its terminations are altogether unlike."

But it may be well to notice more particularly this pathological lesion of the mucous membrane of the stomach, which our author regards as distinct from ordinary gastritis.

The stomach when examined, presented no lesion of its peritoneal, muscular, or cellular coats. On being opened, it was in all cases found to contain a considerable quantity, from half-pint to a pint, of *black vomit*, whether the patient had vomited or not for some time preceding death. On pouring off this, the dark coloured flocculi of black vomit were found adhereing to the mucous coat, upon the superior as well as inferior surface. When these were detached by washing, the mucous membrane was found entire, of a dull pearl *whitish* colour, much *thickened* and *softened;* this thickening was irregular. A very few points of small stelliform, *spattered* patches of bright red existed. In two cases (of seven) this white, thickened, and softened condition of the mucus coat was universal: in 4 cases, from three-fourths to five-sixths only was in this condition, commencing at the pylorus and terminating within one or two inches of the cardiac orifice; while the remaining portion surrounding the cardiac was the seat of a *most intense diffuse red injection*, preserving its usual firmness, being little if at all thickened, and entirely without flocculi adherent to its surface. This injection was not stillated, but diffused. Our author thinks that the first mentioned condition is a sequel to the latter, viz. that the pale, thickening, and softening supervene upon the intense injection or engorgement, a change he thinks connected with the black vomit which is formed principally of blood. His reasoning on this subject is very ingenious. The colourless portion of the mucous tissue is softened and thickened, the injected portion is not; on the contrary the flocculi of the black vomit are only found adherent to the colourless portions; two facts which speak so distinctly for themselves as to require no comment.

There is one other pathological lesion noticed by our author, too important to be passed over without notice, as having a bearing upon the general question of fever. The glands of *Brunner and Peyer* were sometimes *greatly developed*, at other times apparently healthy.

We will not enter into the description of the symptoms of yellow fever as given by our author, except by alluding to two of them, which are commonly so highly characteristic of this affection, viz. the black vomit, and the yellow suffusion after death, both of which in the epidemic described, may be regarded as characteristic symptoms, being seldom or never absent. The former he regards with other observers, as formed by the blood; whether by an imperfectly process of secretion, or whether the blood is effused pure, and undergoes some change by admixture with the fluids of the stomach, may be considered doubtful. The yellow suffusion he supposes to depend upon the colouring matter of the bile which has been deposited by the blood, the liver having ceased to secrete it.

As to the treatment of this disease, our author agrees with the general opinion, that every thing depends upon its being seen early, during the period of excitement, which rarely lasts till the end of the second day. His mode of treatment is moderate, V. S. from 12 to 16 oz. and a mild purgative, infusion of senna, manna, and rhubarb, repeated in frequent and moderate doses, until it operates freely upon the bowels; mustard baths to the feet, and warm diluent drinks; and to lie quietly covered in bed. These points, especially the latter, our author regards of the utmost importance. Mercurials he tried at the onset of the epidemic, but found them of no use. Opium he found a valuable auxilliary in checking the irritability of the stomach.

Finally, we would close this notice by the remark, that our author's experience is decidedly against *contagion* in yellow fever. J. A. S.

SCIENTIFIC INTELLIGENCE.

Proceedings of the Kappa Lambda Society. Regular Meeting, November 27, 1839.

Hydrocephalus. — *Dr. Hoffman* reported a case of difficult labour, from hydrocephalus in the child. The mother was healthy in appearance, and had borne two children after natural labours. He was sent for at 2 A. M., when the pains were strong; the membranes were broken, and the os uteri was dilated to the size of half a dollar, but higher up than usual; and from the progress of her former labour, he expected this to terminate before breakfast. Ten hours, however, elapsed before the os tincæ was fully dilated, and the head of the child occupied the cavity of the pelvis. Having advanced so far as to make slight pressure on the perinæum, the pains continuing regularly, no further progress was made, which led to a more particular examination. The presenting part felt like the head, was firm, and somewhat elastic, and the cranial bones could be distinguished, but it was not wedged, and admitted the passage of the finger to the brim of the pelvis, which was felt to be occupied by another bony mass like the head of a second child. Not having met with such a case before, its nature was not suspected. Dr. S. W. Moore was called in consultation; the forceps was applied and slipped off. This was about 9 P. M. The external parts were livid, and apprehending danger of exhaustion or of sloughing from longer delay, no progress having been made since 12 o'clock, it was determined to perforate the head. This was followed by a gush of water, and by collapse of the presenting part, giving at once the character of the case. By inserting the fingers into the perforation and aiding the pains, a large child was soon delivered, while, suspended from this artificial opening, there was a large bag formed by the head, from which the water had been evacuated. *There had been frequent vomiting during the whole course of the labour.* The uterus contracted on friction of the abdomen and the application of a bandage, and the placenta was thrown into the vagina and removed, and every thing looked favourable. On the following morning, with the exception of frequent vomiting, the patient was thought to be doing well. She had urinated without the aid of a catheter. An examination was made with reference to hernia, but none could be detected. A laxative enema, a sinapism to the epigastrium, ice, and the effervescing mixture, were used to allay the vomiting. Dr. H. was sent for in great haste in the afternoon, and found the patient suffering violent pain in the region of the umbilicus, with incessant vomiting, and that without taking food, and occasional hiccough. Her pulse was active and skin hot. She was bled and took a dose of calomel, but the vomiting continued, with great distress in the epigastrium and desire for cold water: her skin grew cool and pulse feeble, and she died about 1 A. M., 28 hours after delivery. Permission to examine the body could not be obtained. Dr. H. remarked that he had no idea that a hydrocephalic tumour could feel so tense, and bear such a resemblance to the natural head of a child.

Apoplexy. — *Dr. Washington* mentioned the case of a gentleman, formerly a chaplain in the navy, who during the unconsciousness attending an attack of apoplexy, was observed, to the great surprise of his family, to move instinctively in all directions, and even over his head, the left arm, which had been so disabled by a fall upon his shoulder ten years before, that he had not been able, as he thought, to move it more than a few inches from his side, nor to use his hand, except to hold his fork or other light object between his thumb and the side of the fore finger. When the free use of the disabled arm was observed, consecutive fever had supervened, and Dr. W. thinks that, as the paralysis existed on the right side of the body, indicating the occurrence of hæmorrhage on the left side of the brain, the irritation which had supervened in the right side of the brain, in connection with the consecutive inflammatory action, had so excited the nerves and muscles of the left arm as to produce the remarkable instinctive movements which were observed. He still continues insensible, and Dr. W. thinks him past recovery. Hypertrophy of the heart exists, which he believes to be the chief cause of the apoplexy. It may be well to mention, that the fall upon the shoulder was so severe as to fracture the clavicle, and to bruise more or less, it is presumed, the deltoid muscle and shoulder joint. The arm was bound to the side during the treatment of the fractured clavicle; after the bandages were removed, the stiffness of the joint was such that the limb was rendered almost completely useless. This is a case in which the forcible movement of the joint, with friction, would easily have effected a cure o the lameness of the part.

Dr. Post mentioned that he had, in four different instances, been called to children injured by fall or otherwise, where the upper extremity was motionless, and where he could detect no appearance of injury, and found afterwards that they soon recovered without treatment.

Regular Meeting, January 29, 1840. *Scarlatina, followed by bloody urine.*

Dr. Cock related a case of scarlet fever in a boy, followed by bloody urine. The attack was not severe, but ten days after the recovery of the patient, and after he was playing out of doors, he was attacked very suddenly with œdema of the face and neck, which extended from thence over the body and limbs, attended with pains like those of rheumatism, and with bloody urine, which was so thick that blood was deposited in the vessel on standing. This state of things began to subside after continuing three or four weeks, and the urine is now nearly clear, and the pain and swellings also gone. Dr. C. never before saw a case of scarlatina with bloody urine.

Dr. Buck remarked that he had recently been called to see a child 15 months old, which had been caught up suddenly by the right arm a few minutes before, followed immediately by pain and inability to use it. It kept the arm by its side, and cried when it was moved. No lesion of any kind could be discovered by careful examination, though rotation of the shoulder gave pain. The arm was secured to the chest by means of a handkerchief. Two days after, it could bear handling with less suffering, when the handkerchief was left off; and the day after, it began to use its arm. Analogous cases were reported by Dr. Post at the last meeting.

Regular Meeting, Feb. 26*th*, 1840. — *Dr. Macdonald* stated a case of *Hydatids of the Kidneys in connection with disorder of the Brain.*

H. M., age 70, thin in flesh, of temperate habits, had been long troubled with incontinence of urine, particularly when exposed to cold, but in other respects enjoyed good health, until the beginning of January, 1840, when he fell from a ladder, and so hurt his back that he was unable to walk for several days, but did not consider himself sick or disabled in any other way. About ten days after this accident, Dr. M. was sent for and found him suffering under retention of urine, which he was obliged to relieve by the catheter. No other unpleasant symptoms had as yet existed, except restlessness, loss of appetite, and debility. Diuretics of Spts. Æther. Nitr., &c., were administered with relief to the bladder for a few days, but it was soon necessary to have recourse again to the catheter. Accompanying this symptom, were great prostration of strength, diminished secretion of urine, intermittent pulse, loss of appetite, and daily delirium, and weakness of mind; and this chiefly at night. He talked wildly, was lost in reverie, and seemed to forget the faces of his own family. During the morning, and early part of the day, he was more calm and collected. Did not complain of pain, and never allowed that he was seriously ill. Irritability of the mucous lining of the bladder increased with the loss of its muscular power. Pain in the part rendered it necessary to draw off the urine, five, six and seven times a day, even when the secretion was scanty. Albumen could not be detected in his urine, either by heat or nitric acid. The brain became more oppressed, the debility greater, and the discharges from the bladder ropy and mucous.

His treatment consisted of tonics, diuretics, nourishing diet. He sank gradually, and died February 25th, after having been comatose for forty-eight hours.

Post-mortem examination. — Mucous lining of the bladder excessively hypertrophied and sacculated. The trigone, or third lobe of prostate, very much enlarged.

Kidneys situated very high — externally of an unusually dark colour. When the peritoneal covering was removed, cysts seem scattered over the surface as large as half of a hazlenut, containing a transparent fluid; the same kind of cysts were found throughout the organ; the pelvis of the left kidney filled with pus; about half a pint of which was found in the region surrounding it.

The circumstances attending this autopsy were such, that it was impracticable to extend the examination to the brain. This is the more to be regretted, because the chief point of interest in the case was the connection between renal disease and cerebral disorder. That suppression of urine has the effect of inducing disorder of the brain, has long been familiar to the profession; but the singular connection between diseases of the kidneys and disordered function of the brain, was first pointed out by Dr. Addison.

Dr. Washington related the account of a post-mortem examination of a child 9 weeks old, which had commenced coughing at the age of five weeks, as he was informed by the physician who had attended it. There was some cough previously, but from that period, it coughed incessantly up to the time of its death. There was no decided inflammatory or feverish action manifested on the surface of the body, and the respiration was not altered so as to attract attention. The evacuations from the bowels were of a greenish colour, but became natural after the use of appropriate remedies. On examination after death, a slight increase of vascularity of the lining membrane of the throat was found. Both lungs were decidedly diseased. Percussion on them was dull before the body was opened. The lower part of the two anterior lobes of the right lung were in a state of hepatization, and also the portion of the posterior lobe resting on the diaphragm. The remainder of this lung was pale, but contained more air and more blood than natural. There were also points of a viscid matter, between pus and mucus, resembling cream, of which it was difficult to say whether they were in the bronchial tubes or in the cellular tissue, but which were probably in the latter. The glands of Peyer were more prominent than natural, though not very much elevated. The glands of the large intestines were more changed than those of the small, and presented, for some distance, something like the appearance of knotted lace, being elevated about a quarter of a line. There was more or less redness in streaks and points, but not diffused. The liver was larger than natural, and had pushed the stomach down, so that its pyloric orifice was about a quarter of an inch above the umbilicus in the median line, while its greater curvature extended to the crest of the ilium on the right side; its internal structure was apparently healthy; its peritoneal surface was slightly mottled, and more vascular than natural. The kidneys and other parts were natural. The brain was not examined. Dr. W. remarked, that he was informed that another child of the same family had died in a similar manner, but that no examination after death was made, and that he doubtless died of the same disease as this one.

Dr. W. also mentioned the case of a young man, who was crushed while passing under a canal bridge at Rochester. The distance between the top of the baggage on the boat and the bridge was but a few inches. He had forgotten himself, and was sitting with his back to the bridge, smoking. Some of the baggage on which he was sitting was thrown into the water. The accident occurred six months ago; he was unable to walk for nine weeks afterwards. He was bled and purged very freely, and in six weeks began to recover the use of his lower limbs, having been unable to move them at all before that time. He could not walk after he got up, until he put a belt around his body made of two surcingles, and even now, he thinks he could not walk about without it, but with it he walks with ease, and is now a night-watcher at Brower's stables. He suffers more in sitting than in walking. There is now a considerable prominence of the dorsal region of the back, and an elevation of the vertebral column, four or five inches in length, with an additional prominence of one of the vertebræ. The right limb is now smaller than natural. He says that he weighed 175 lbs. before the accident, and now weighs only 140 lbs. Dr. W. ordered him to continue the use of his girdle, and directed the tincture of iodine to be applied to the back, as he still complains of weakness and pain. Dr. W. then made some remarks on the external application of the tincture of iodine in chronic inflammatory swellings, in the manner recommended by Davis; he has generally found it followed by beneficial results.

Regular Meeting, March 25. *Separation of the Epyphisis of the Femur. Dr. Post* mentioned a case of injury in a girl 16 years old, who, in taking a slight step with a child in her arms, made a false movement. She felt something give way, and was obliged to lean against a wall. Dr. P. saw her the next day, when he found the affected limb one inch shorter than the opposite one, movable, the toes turned outward, no swelling, some pain, but not severe, on the upper part of the thigh the trochanter could be moved with the shaft of the bone, and was now shorter than natural, and there was crepitus. From the age of the patient, and the slight degree of violence by which the injury was produced, Dr. P. thought that a separation of the epiphysis of the head of the bone took place. This is a rare accident, and is not mentioned at all by Cooper, and barely alluded to by Liston. The extending apparatus was applied, and the limb is now a quarter to half an inch shorter than the other.

Chronic Pleurisy.—Dr. Willett related an interesting case of Chronic Pleurisy which terminated favourably. The first symptoms had occurred nine months before he saw the patient, who had been supposed by his previous medical attendant, (who was not in the habit of examining by auscultation) to be laboring under consumption. There was pain in the left side, frequency of respiration, and dyspnœa, also fever in the middle of the day and at evening, and perspiration at night. On examination of the chest, Dr. W. found dullness or precussion extending from the claricle to the lower part of the chest; no respiratory murmur could be heard in front, and very little over the scapular region. Cups were applied, followed by a large blister, both anteriorly and posteriorly, and the use of squills, digitalis, and blue pill commenced, at the end of a fortnight, the fluid had left the upper part of the chest, and at the end of four weeks, the lung had completely recovered its power, and the respiratory murmur was heard over the whole chest, except a small portion a little to the left of the heart. This was treated by the use of small blisters, repeatedly applied, and the patient recovered. This was six months ago, and the health of the patient continues good.

Dr. Hoffman exhibited a specimen of cancerous deposit in the left lobe of the liver, taken from a patient 65 years old, from whence he removed a breast and two auxillary glands, in June 1837. There was no appearance of the return of the disease until five months ago, when there was swelling under the axilla, with some œdema. One of the immediate causes of death was compression of the bronchial glands, producing great difficulty of respiration, together with pleuritic inflammation of the right side of the chest, with considerable effusion.

Regular meeting, April 19, 1840.—*Dr. Post* exhibited several casts of club-feet, taken from patients on which he had operated ; two casts of a case of talipes *equinus*, congenital, in a boy fourteen years of age, one showing the deformity before the operation, and the other taken four weeks after it ; a cast of a congenital case in a patient 35 years old, intermediate between T. *equinus* and T. *varus*, in which he divided the tendo achillis on the 17th Jan. last ; the patient was deformed in other respects, his speech thick, &c. ; he now walks with the whole sole of the foot on the ground, wearing a common laced boot with a spring on the outside ; also a cast taken from a girl 6 years old, on which he operated on the 26th Feb., in which the deformity was very great, so that the foot was supported on the outer edge of the os cuboides, no part of the sole touching the ground.

Chorea cured by Actæa Racemosa.—Dr. Beadle mentioned a case of chorea successfully treated by actæa racemosa. The patient was a girl 18 years old, who had suffered three months from the same affection four years previously, and had irregular motions four days before he saw her There was considerable gastric derangement, and there had been suppression of the menses nearly five months ; as she was near her period, cathartics and the warm hip bath were ordered, and afterwards cathartics and anti-spasmodies, but the symptoms were, in seven days from the commencement of treatment, so much aggravated that hardly a muscle of the body was quiet ; she was entirely deprived of sleep, and had at night such violent paroxysms of convulsions as to require the constant services of an attendant to keep her on the bed. He then discontinued the use of all other remedies (except an occasional dose of Sulph. Mag.) and gave five grs. of the powder of the root of actea racemosa every three hours. After the first night, she rested tolerably well, but there was little improvement in her condition during the day for nearly a week, after which, she improved rapidly, and was well in three weeks. The medicine produced no sensible effect whatever. The catamenia did not return, but she was delivered of a child at the end of nine months.

Puerperal Fever.—*Dr. Hoffman* related a case of puerperal peritonitis in private practice. The patient resided in the eastern part of the city, where other cases have occurred this season. She was 24 years of age, and in very comfortable circumstances, was of short stature, rather corpulent, and of leucophlegmatic temperament, and had borne four children, all living. At the end of the seventh month of gestation, agreeably to her reckoning, the membranes broke, and the liquor amnii was discharged, in consequence of which he was sent for. This was on the 5th April; she then complained of a sense of weight and tenderness in thehypogastric region, which made it painful to ascend the stairs or walk, and having been bled during the proceeding month, she was advised to be abstemious in her diet, to observe quietude of mind and body, and to wait patiently for labour pains. These did not come on until 21st April, nearly three weeks afterwards, when the doctor saw her. Her previous labours had been speedy, and her children large, one weighing 12 pounds at birth. The os uteri was now dilated to the size of a two shilling piece, but was not acted on in proportion to the pains, which were severe and referred to the abdomen, and this she described as being so sore that she could not bear down. The pulse was soft, there was no heat of skin, the vagina was relaxed, and in the absence of the indication for bleeding, an anodyne of fifty drops of McMunn's elixir of opium was given. The pain left the abdomen and was complained of in the back, and the birth of a small, and evidently premature child, was completed soon after taking the anodyne at about 2 P. M. On the 22d, the day after delivery, he found that she had passed a tolerably good night, except from the disturbance caused by an older child. But he was sent for in the evening, and found to his regret, that she had been seized with a chill about six hours previously, with intense and continued pain in the abdomen, aggravated in paroxyisms, and this part very sensitive to the touch. The pulse was frequent and soft, the skin moist but hot, the lochial discharge diminished. He hesitated as to the proper course of treatment, but decided on bleeding her from the arm sitting up in bed. She grew faint at the loss of 12 ounces of blood, which led him to doubt if it was a case of peritonitis. A. laxative enema, 20 grs. calomel with 100 drops Mc Munn's elixir, and a warm hop poultice to the abdomen were ordered, and she was left for the night. On the 23d, he found that she had passed a restless night; there had been no stool; the bowels were much distended with flatus, without any mitigation of the tenderness and pain. The blood drawn abounded in serum; the coagulum was soft, with a very thin layer of fibrine. She complained of vertigo and dimness of vision, and expressed much apprehension of dying. A dose of salts and magnesia, which she preferred to castor oil, from its having acted kindly before, and a pill of three grains of ext. of hyoscyamus every three hours, were prescribed, but without relief. On the 24th, calomel was given, in combination with the extr. of hyoscyamus, and a blister applied to the abdomen. On the 25th, vomiting of dark fluid, like coffee-grounds, supervened, the abdomen became excessively tympanitic, and the respiration painfully oppressed, causing a sense of suffocation, and requiring the windows to be kept open to enable her to breathe during the night; and on the 26th, the fifth day after the chill, she died. An examination of the abdominal viscera was made in the afternoon. A thick layer of fat covered the abdominal muscles. The peritoneal sac contained from 12 to 16 oz. of sero-purulent fluid, with some flakes of lymph. The membrane itself was rather vascular, and of a pink colour in spots, and at its inferior part thickened, as if from chronic inflammation. The uterus and ovaria, when incised, looked natural. The colon was enormously distended with air, making great pressure on the diaphragm, and accounting for the dyspnœa. No lesion was detected in the mucous coat of the stomach.

Report of Primary Syphilitic Cases. By CHARLES ASTON KEY.

In this report Mr. Key makes some valuable remarks on the treatment of several forms of primary syphilis. He regards nitrate of silver as the best application in the early stage of most cases of common vesicular chancre. In his practice, it frequently arrests the disease, destroying its seat, and preventing the local and constitutional extension of the infection. When it fails at once to arrest the disease, it limits its action and improves its condition. When it is used for the purpose of destroying the seat of the disease, it should be applied freely to the sore. When it is employed simply to promote the healing of the sore, the surface should be lightly touched with it, and the application should be repeated as often as the eschar separates. The author regards all mercurial applications in the early stage as decidedly injurious, occasioning an increased sensibility of the sore, and a disposition to spread by ulceration. During the ulcerative stage, if there be much induration of the base of the sore, mercury may be administered internally, but with much caution, while non-mercurial astringents are applied externally. After the granulating stage has become fairly established, mercury may be administered with much more freedom. There are some syphilitic sores in which mercurial applications may be advantageously made during the ulcerative stage, viz , those which are characterized by a thick and firm, prominent margin, granulating at the outer edge while the inner is slowly ulcerating.

In irritable chancres, the author avoids the use of mercury, and relies on emollient and soothing applications, with the occasional employment of nitrate of silver, and the internal use of Dover's powder in full doses, and the cold infusion of sarsaparilla in lime-water.

In the phagedenic chancre, mercurial remedies are wholly inadmissible. Opium should be given to obtain rest; and moderate doses are generally sufficient for this purpose, except in persons of intemperate habits. When these sores are attended with much excitement of the vascular and nervous systems, the author regards sarsaparilla as a valuable remedy. When there are marks of depression and debility, ammonia or quinine, or similar stimulants, are called for. But Mr. Key places most reliance on iodine and its combinations. He makes the following remarks on the virtue of this remedy: —

"Its property seems to be stimulant or tonic: it increases vital energy and action, rendering the pulse strong and full: it improves the appetite and powers of digestion, imparting vigour to the chylo-poietic viscera: hence its benefit seems especially adapted to that kind of ulceration which depends on want of power, combined with an excess of irritability. In both the mild forms of phagedæna, and in those sores which are covered with the yellow slough, it is found most serviceable: it imparts vigour to the weak textures, and enables them to resist the disorganizing process of ulceration. The inflammation that attends these sores seems also to be within its control; for in a day or two after its exhibition, the sore that had been painful becomes easy, and the blush of inflammation assumes a fainter colour and its area diminishes. Both in the primary and secondary forms of this disease, iodine is often found to arrest the progress of syphilitic action in persons who cannot bear mercury; and next to that mineral, iodine seems to possess the highest anti-syphilitic powers. Its effects are less permanent and less certain in the normal forms of disease; but its action is less injurious to the constitution. Mercury increases the irritability of the system in many persons, enfeebles the constitution, and disposes sores to phagadænic action: the effect of iodine is the reverse of this: it may be said that iodine fulfils that in which mercury is deficient. In the normal forms of syphilis, mercury is rarely found to disappoint the expectation of the practitioner; and in the abnormal forms of primary syphilis, it as rarely fails to do harm, while iodine exerts comparatively little influence over the normal chancre, chiefly confining its good services to the sores that are "set astray" by some peculiar condition of constitution. The forms in which I employ it are, the iodide of potassium alone or combined, and the solution of iodine in the salt. I do not find it necessary to increase the dose beyond seven grains of the salt, or half a grain of the pure iodine. In some of those sores that are not amenable to the action of iodine, the aid of mercury in small doses is wanted, and in such forms as produce the least disturbance of the system. It is best given at night with Dover's powder, in form of the chloride, or the gray oxide with chalk. The action of mercury is sometimes wanted for sores that, having shown an abnormal disposition, have lost it under the action of iodine, and yet will not granulate or cicatrize. The syphilitic action still predominates in them; and yields only to mercury, which should be given in the most guarded manner."

In the sloughing phagedæna, opium or morphia should be given at night in full doses to procure rest; and if that fails, it should be given at intervals of four or six hours, combined with stimulants, such as camphor, capsicum, quinine, wine, and spirits. But if there be much vascular excitement, opium should be given only in small doses at night, and other means employed to allay irritation.

"The cold alkaline infusions of sarsa form, in such cases, a good substitute for the stimulants and tonics above mentioned: and as soon as the pulse is quiet, iodine, in some form, is found to put a stop to the ulcerative action. These measures often check the more severe, as they do the milder forms of phagedænic sore; and the propriety of using them, in preference to stimulants, must depend on the condition of the patient; the latter should only be used when the powers of life are enfeebled, and irritability maintained by want of the accustomed stimulus. The local applications that have most efficacy are those of a stimulating kind. The undiluted nitric acid is one of the most effective, as well as most safe; and one application to the whole surface of the ulcer, so as to imbue the whole ulcerating and sloughing textures, is usually sufficient to arrest the mischief: it converts the ulcerative action into a sloughing one; and the white or yellow parts become brown, die, are cast off, and leave a healthy granulating surface. Solutions of nitro-muriatic acid with opium, the cataplasma cumini, Peruvian balsam, with equal quantity of liquor opii sedativus, are useful when the sloughing prevails more than the ulcerative action. I cannot confirm the propriety of giving mercury for the white sloughing sores, as advised by a late writer on syphilis. The recommendation seems fraught with danger; it is inadmissible as long as the ulcerative action is going rapidly on; and should be given, if at all, only when the white coating of the sore has acquired a firmness that indicates the cessation of phagedænic action. Happily, mercury is altogether needless; as iodine is sufficient of itself to check the ulceration, and to produce a healthy granulating surface. Even when every sign of phagedænic action has left the sore, it seems better to defer the use of mercury, for the healing of the sore, or with the view of preventing secondary symptoms."

Mr. Key regards the black sloughing chancre as of an inflammatory character, requiring, especially in the commencement, active antiphlogistic measures. He considers lint, wet with the compound tincture of benzoin, the best local application. When the sloughing process has been rapid and extensive, it leaves behind a healthy granulating surface, and there is little danger of secondary symptoms. — *Guy's Hosp. Rep'ts.*

Statistics of Amputations. — We give below the results of the statistical tables published in the last number of our esteemed cotemporary, the American Journal of Medical Sciences. The first of these tables is by Dr. Norris of Philadelphia, who, it will be remembered, published a less extended report on the same subject, about two years since, drawn from the cases occurring in the Pennsylvania Hospital. The second table is by Dr. Hayward, of Boston; and is a summary of all the important amputations that have been performed in the Massachusetts General Hospital since its foundation. With respect to the importance of determining the exact degree of fatality attending any serious surgical operation, there can be but one opinion: but we do not think the question is likely to be determined by any series of investigations that does not enter minutely into the condition of each patient at the time of the operation; and even then, we should have to draw our estimates at different degrees of fatality, according to the varying condition of the patients at the time.

The most then that can be made out, by these tables, is, that of 146 patients in a condition requiring amputation, and upon whom the operation was performed, 37 died; and hence that the fatality under these circumstances, is as 37 to 146. This, however, is far from showing that the danger of the operation itself, is in the same proportion. We remember an amusing discussion, that occurred during our early studies between ourselves and a fellow student, who, during his visits at the New-York Hospital, had observed that almost every case of fever that had been put on the use of carbonate of ammonia, ultimately proved fatal. From this observation, in his want of other information, he at once concluded that carbonate of ammonia must be one of the most dangerous and fatal remedies. We had no inconsiderable trouble to persuade him to the contrary. We are far from denying that amputation is a dangerous or frequently fatal operation. But there is something more than analogy between the observations of our fellow student, in respect to carbonate of ammonia, and those of these gentlemen in respect to amputations. For the credit both of medicine and surgery, we must look rather to the disease than to the remedy for the fatal terminations.

Dr. Norris offers the following summary : —

"Of eighty amputations on 79 patients, performed during a term of ten years at the Pennsylvania Hospital, thirty-five were primary, of which twenty-four were cured and eleven died, four of the deaths occurring within the twenty-four hours immediately following it.

Twenty were secondary, of which thirteen were cured and seven died.

Twenty-five* were for the cure of chronic affections, of which twenty were cured and four died.

Thirty-two of the amputations were of the upper extremity, of which twenty-seven were cured and five died.

Forty-seven were of the lower extremity, of which thirty-one were cured and sixteen died.

Seven were amputations at the joints, of which four were cured and three died.

13	of the 79 operated on, were under 20 years of age,	of whom 12 were cured	and 1 died.
26	were between 20 and 30,	of whom 19 were cured	and 7 died.
22	were between 30 and 40,	of whom 15 were cured	and 7 died.
16	were between 40 and 50,	of whom 9 were cured	and 7 died,
2	were upwards of 50,	of whom 2 were cured.	
79		57	22

The conclusions to be drawn from an analysis of the two tables which I have now published are,

1. That amputation† with us is to be regarded as an operation attended with much danger to the life of the individual, the mortality after it being 1 in $3\frac{7}{11}$.

2. That the chances of success after it are much greater in persons who have been for some time suffering from chronic diseases, than in those who have it done while enjoying robust health, the mortality in the former class of cases being 1 in $6\frac{1}{4}$, while in the latter it is 1 in $3\frac{2}{11}$.

3. That immediate amputations after injuries are less fatal than secondary operations, the mortality after the former being 1 in $3\frac{2}{11}$, while in the latter it is 1 in $2\frac{6}{7}$.

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* One double.

† The *great* amputations only, it will be recollected, are alluded to. No death has followed any of the amputations of fingers or toes, which have been made in the hospital during the ten years past.

4. That amputation of the lower extremity is much more fatal than that of the superior member, the mortality after the former being 1 in $2\frac{15}{16}$, while in the last mentioned class of cases, it is only one in $6\frac{2}{5}$; and

5. That the danger increases with the age of the individual operated on."

The following is Dr. Hayward's summary:—

From this table, it appears that there were seventy operations on sixty-seven patients; three patients having two limbs removed. In one of these cases, one operation was above and the other below the knee, and in the other two, both operations were below; the first patient died, and the other two did well.

Of the whole number operated on, fifteen died and the remainder recovered, at least so far as to be able to leave the hospital; though it is probable that in some instances the disease may have returned.

There were thirty-four patients who had the thigh amputated, and one of these had the other leg taken off at the same time below the knee; of this number nine died. Of twenty-three patients whose legs were amputated below the knee, two having both legs removed, five died; and of the ten who had an arm amputated, six below and four above the elbow, one died.

This goes to confirm the prevailing opinion among surgeons, that amputation of the lower extremities is more often followed by fatal consequences than that of the upper, and that death takes place more frequently after amputation of the thigh, than after that of the leg. More than a quarter of those whose thighs were amputated died, while there was but little more than one death in five among those whose legs were removed below the knee, and only one of the ten whose arms were amputated. This patient too died of delirium tremens. The operation to be sure did not arrest the disease, but apparently contributed nothing to the fatal result.

This table tends also to support the opinion, that patients who undergo amputation for chronic diseases are much more likely to recover than those in whom it is performed in consequence of recent accidents. Of the first class, there were forty-five patients afflicted with various diseases, and of this number all recovered but six; and of the remaining twenty-two, whose limbs were removed on account of recent injuries, no less than ten died; being nearly half of the latter and less than one in seven of the former.

This fact certainly gives support to the opinion, that a state of high health is not favourable to surgical operations; and it also tends to show that death after amputation is not by any means attributable in all cases to the operation alone; for if it were, the proportion of deaths should be as large among one class of patients as among the other. There can be no doubt, I think, that the result is influenced very much not only by the age and constitution of the patient and the disease or injury for which the operation is performed, but also at the period at which it is done. I have before said that I thought that amputation was "often performed when it might have been avoided." But this remark applies principally to cases of recent injury. In those of chronic diseases of the limbs, the error is more apt to be of the opposite character; the operation is either not performed, or if done at all, frequently not till it is too late. It cannot be denied, I think, that there is a disposition at the present day to defer the amputation too long in cases of diseased limbs; there is an unwillingness to admit that the morbid affection is beyond the reach of remedies, and the operation is too often postponed till other parts become affected, or the system is worn down by continued irritation. At length the limb is removed; but the patient, already exhausted by disease and long suffering, is hurried to his end by the very means that might have saved him, if they had been earlier employed.

If amputation is frequently too long delayed in chronic diseases of the limbs, it is, I fear, very often resorted to in recent injuries earlier than it should be. Many limbs that have been removed, might probably have been saved; but where this cannot be done, it is rare that much inconvenience would follow from a little delay.

In most cases of accident sufficiently severe to justify amputation, the whole system has suffered a great shock, and an operation at this time, before reaction is fairly established, is very likely to cut off what little chance the patient might otherwise have of recovery. While the extremities are cold and the action of the heart is feeble, the local injury is hardly, if at all, perceived, and adds nothing to the patient's sufferings. An operation cannot be required then; and yet how often is it done at that period; the better judgement of the surgical attendant sometimes being overruled by the importunate interference of the bystanders.

If the injury be not so serious as to cause almost immediate death, reaction usually comes on with proper management in a few hours, and then, if an operation be necessary, it can be done with a much greater prospect of success.

With regard to the ages of the patients operated on, it appears that there were

		Under 20	years of age	13,	of this number	1 died.
Over 20 and not exceeding		30	do.	31,	do.	8 do.
Do. 30	do.	40	do.	9,	do.	3 do.
Do. 40	do.	50	do.	10,	do.	2 do.
Do. 50	do.	60	do.	3,	do.	1 do.
		Over 70	do.	1,	do.	0 do.

Whole number, 67. No. of deaths, 15.

Cure of Congenital Squinting by Division of the Internal Straight Muscle of the Eye. By Professor DIEFFENBACH of Berlin.

CASE I. The subject of this operation was a child seven years old, whose eye was drawn far into the inner angle of the eyelids, so as to produce considerable disfigurement. The operation was performed in the following manner: The head of the child was held against the chest of one assistant, while another with two hooks kept the eyelids widely apart. The operator then passed a third hook, which he gave to a third assistant to hold, through the conjunctiva, and to some depth in the subjacent cellular tissue at the internal canthus. He next fixed a fine double hook in the sclerotica at the inner angle, and taking it in his left hand drew the eye outwards. Then cutting into the conjunctiva close to the ball where it is continued from it to the internal canthus, and penetrating more deeply by separating the cellular tissue by the side of the sclerotica, he divided the internal rectus muscle close to its insertion with a fine pair of scissors. The eye was immediately drawn outwards by the external rectus, as if it had received an electric shock; and in another instant became straight, so that there was no difference perceptible between its direction and that of the other eye.

The hemorrhage during the operation was but slight, though sufficient to impede it. The after-treatment consisted of cold lotions; no inflammation ensued, and within eight days the cure was completed.

CASE II. Carl Gerhard, æt. ten, affected with squint since his fourth year. His parents wishing him to become a printer, were anxious to have this defect removed as it interfered with composing. The right eye was so completely drawn into the inner angle that on a first view, the point of junction of the iris and sclerotica formed the centre of the anterior surface of the eyeball. By an effort the eye could be drawn from the canthus and placed straight, but could not be turned at all outwards. The operation was performed as in the last case, the conjunctiva being cut through, and the sclerotica laid bare to the extent of four lines, in order to bring the muscle into view, which was cut with a curved scissors as before. The squint was gone; the eyeball when at rest stood nearly straight, or rather a little turned outwards; and could be turned more readily by the patient's efforts in this direction than inwards. All the other movements of the eye were free. The bleeding was here much less than in the former case, and caused no interruption. The sudden turning of the eyeball outwards, observed in the first case, did not take place here.

The boy felt quite well on the following day. He could separate the eyelids without difficulty. The conjunctiva in the inner angle of the eye was red. The eye was nearly straight, only turned a little more outwards than the other. In eight days the cure was complete and the eye quite straight.

CASE III. Albert Victor, æt. fifteen, affected with strabismus of the left eye since his earliest infancy. The eyeball was turned deeply into the inner angle, but by an effort of the will it could be turned straight, but on this effort being relaxed, it instantly returned to the former position.. The operation was performed precisely in the same manner, it being only here specified that the internal incision in the conjunctiva was semilunar, and that the muscle was cut by introducing the pointed blade of the scissors beneath it. As soon as the hook that held the eye was removed, the ball turned at first outwards, but in a moment returned to the straight position. The edges of the wound did not gape, so that the external incision was barely perceptible. The eye was covered with a cold poultice and the patient subjected to the antiphlogistic regimen. In eight days the cure was complete and the squint entirely gone.—

[Mr. Lucas, an English Surgeon, has also reported several cases of strabismus successfully operated upon, in a late number of the Lancet. He has materially modified the operation of Dieffenbach, and as we think, improved it.

Mr. Lucas uses but one hook which he introduces into the inner conjunctiva about three lines distance from the cornea, and with a very fine, straight knife divides this membrane from below upwards to the extent of half an inch, leaving the hook still attached to the inner segment of the incision; he next separates the divided inner portion of the conjunctiva from the subjacent sclerotic coat by means of a blunt probe—a bent probe was now introduced between the lips of the incision and passed underneath the tendon of the internal rectus muscle—the hook is withdrawn and the operation suspended for a moment. By means of the bent probe the tendon is raised towards the incision of the conjunctiva so as completely to bring it into view and divided with a curved scissors.]

B. & F. Rev.

A Tumour of the Scrotum containing the Remains of a Fœtus. By U. V. Izokalski, M. D. January 18th, 1840. A patient, æt. 21 years, of good constitution, entered the Hospital La Charité, with a tumour of the right side of the scrotum, the size of a large egg. The patient pretended that this had existed always; his mother had told him that when he was four months' old it was as large as at present. It has always been perfectly insensible, so that a pointed instrument could be passed through it without causing the least pain. At the posterior portion there were three small openings which discharged a small quantity of fatty substance. A tuft of hair, also, passed out of one of these apertures which the patient said appeared before that in the pubis. Most of these particulars were confirmed by the family physician.

On examination, a rounded tumour, as already noticed, of the size of a large turkey's egg, was situated upon the external portion of the right side of the scrotum. It was covered by a very white skin, on which were numerous fine, short, scattered hairs entirely unlike those commonly found on the scrotum. This white colour of the tumour was very distinct from the dark brown colour of the scrotum, and this change was immediate. As before stated, the tumour was perfectly insensible, while the scrotum was very sensitive. Pressed in different ways, the tumour presented the firmness of a fibrous tumour, although in some portions it was less hard than in others. Posteriorly, something is felt in the substance of the tumour like an osseous concretion surrounded by soft parts. Pressing around three fistulous openings which discharge the fatty substance, nothing like pus or serum was noticed. From the largest of these openings, as has been already stated, a fine tuft of hair grew out.

The relations of the tumour to the testicle were the following: — The testicle and epididymis, situated internally, felt natural, except, perhaps, a little enlarged. The cord was also unaffected; and the functions of these organs were perfect. The patient had never had the venereal disease.

M. Velpeau pronounced this tumour to be composed of the remains of a fœtus; and January 29th, he operated upon it in the following manner: — The tumour was circumscribed by a circular incision of the skin of the scrotum, and after a minute dissection, the diseased mass was separated from the surrounding parts. The tunica vaginalis was not opened. The edges of the wound were brought together by the twisted suture. On the 30th, the patient passed a sleepless night, and had fever; he was bled ℥xii. On the 31st, there was some congestion along the cord. On February 2d, the scrotum was red, swollen, tense, and painful; gangrene threatened; simple punctures were resorted to. February 4th, the patient was better; but he finally died 24 days after the operation, of metastatic abscesses in the lungs.

The tumour, dissected after its removal, contained several cysts of different sizes and of variable contents. The largest contained a fatty substance of a grayish colour, composed of distinct portions connected by jelly-like substance. Another about the size of a horse-chestnut, also contained this fatty matter, but darker in colour, and holding in its centre a quantity of very fine hair. Often cysts contained a semi-fluid substance like the vitreous humour, only yellow and stringy. The solid portion of the tumour was anomalous in its structure, unlike anything heretofore described, and of a rosy tint, containing masses of fatty substance. In its centre was found a hard portion composed of different bones variously arranged, and articulated with each other. By very careful dissection, these bones were separated into three groups. The principal group, which at first appeared to be a single bone, was found to be composed of three pieces. The largest formed a strong bony mass a little irregular in shape; from one of its sides a prolongation passed off, bent upon itself in opposite directions; from the other side, passed two articulated *fragments;* although these bones were so irregularly disposed, one can hardly doubt that they belonged to the pelvis. The second group was composed of long bones, articulated by fibrous substance: among these there was a flat bone. The third group composed of many flat bones and of a chain of bony nuclei much united with each other; probably they were the remains of the head and of the spine. — *Arch. Gen. de Med.*

Congenital Luxations of the Os Femoris.—Report of M. Gerdy to the Royal Academy of Medicine, Paris.

M. Gerdy describes under the appellation of congenital luxations all those which occur either before or after birth, in consequence of a primitive defect in the structure of the articulation. The head of the os femoris is ordinarily flattened and of small volume, and the neck varies much as to its form and the manner of its connection with the body. The acetabulum is commonly contracted and deformed, sometimes reduced to a slight depression, which may be broad or narrow; it is sometimes pretty large, rounded, elliptical, or triangular. Sometimes it is sufficiently large to receive the head of the os femoris, or even too large. The abnormal cavity which receives the head of the thigh-bone, is often placed above the acetabulum, being sometimes thrown forward and sometimes backward. A more or less prominent and irregular bony margin surrounds this new cavity, being most marked at its upper part. In some instances, there is not the slightest trace of depression. The cartilage of the acetabulum is commonly deficient, but that which covers the head of the os femoris ordinarily exists, but is somewhat thinner than in its normal state. The periosteum, covering that portion of the ilium with which the head of the thigh-bone is connected, is thickened, and presents a fibro-cartilaginous appearance, when an intimate connection exists between the two bones. The round ligament is sometimes destroyed, or consists simply of a slight ligamentous prominence ; in other cases it exists, but it is then always elongated, almost always attenuated, and sometimes divided into several feeble bands. The capsular ligament is not lacerated, but is elongated in the direction of the luxation. It is commonly folded at right angles between the superior extremity of the bone and the acetabulum, and is often strangulated at this point, but not always so as to render impossible the immediate reduction of the displaced bone. The capsule is commonly much hypertrophied, and the head of the os femoris pressing against it, supports the weight of half the body, as the wrist would support a weight appended to the sleeve of a coat extending beyond the closed hand. When the capsule is short and very thick, it may oppose the immediate reduction of the thigh-bone, but it will finally yield to prolonged efforts, suitably made and gradually increased. This luxation occasions changes in the muscles above the acetabulum. The gluteus minimus may be atrophed, destroyed, or traversed by the head of the bone ; the neighbouring muscles are often in part discoloured and transformed into a yellowish fibro-cellular tissue of a fatty appearance ; they finally become confounded with the capsular ligament, to the strength of which they contribute. Another class of deformities occurs secondarily. The pressure of the thigh-bones upon a part of the ilium, which is weaker than the acetabulum, causes the bone to yield, and changes in a remarkable manner the form of the superior aperture of the pelvis. On the other hand the ischia are drawn outwards by the action of the gemelli, obturatores and quadrati femorum muscles, which are themselves carried forward and upward by the displaced ossa femorum. In this manner, the transverse diameter of the inferior aperture of the pelvis is enlarged. By these changes in the pelvis parturition is sometimes impeded, and is sometimes rendered too easy. In these luxations, the limb is generally rotated inward, but sometimes in the opposite direction. Frequently the limb is inclined inward, so that the knee and leg tend to cross those of the opposite side. This limb is also shortened, the degree of shortening often increasing with the progress of age, in consequence of the weight of the body stretching the capsular ligament. When there is a bony prominence which supports the head of the os femoris, the shortening does not continue to increase. Atrophy of the lower extremity from the ilium downward frequently occurs, and when it exists to such a degree, that the limb cannot be used for walking, anchylosis occurs between the os femoris and the ilium. Curvature of the spine frequently follows these luxations. Dupuytren saw one case in which there was abnormal mobility between the last lumbar vertebra and the sacrum.

Signs of congenital luxation. A hollow is felt in the groin, at the point corresponding with the normal position of the head of the thigh-bone. The superior extremity of the os femoris may sometimes be felt on the dorsum of the ilium, but it is often so thickly covered by soft parts, that it cannot be felt. When the pelvis is firmly held by assistants, and extension is made upon the limb, the member becomes elongated. Sometimes the elongation is only apparent, owing to the inclination of the pelvis. When the thigh is flexed, and at the same time, the hand is placed upon the trochanter major, a movement of the head of the bone is felt in an arc of a circle. This movement, however, will not exist in those cases in which the head and neck of the os femoris are deficient, and in those in which a new articular cavity is formed. In standing, the trunk is thrown backward to preserve the equilibrium ; and in walking, the foot of the affected side commonly touches the ground only by its extremity. But in some cases, the sound limb is shortened by flexing the knee, and the foot of the affected side is applied to the ground by its whole plantar surface. The movements of the joint are limited, especially those of abduction and rotation. When the patient walks, his limping is attended with marked lateral oscillations of the trunk. Some persons affected with this luxation, are unable to walk without the assistance of a crutch or cane. Running is easier than walking, less effort being required to maintain the equilibrium of the body.

These luxations are not generally noticed at their commencement, attention being first directed to them at the period when the child is expected to walk. Girls are more subject to congenital luxations than boys.

The following case is reported by Mr. Pravas, the subject having been examined by a commission appointed by the Academy. A boy seven years old had been observed to limp at the age of fifteen or eighteen months: his lameness was found to depend on congenital luxation at the hip. Gradual extension was made with daily intervals of rest, and the reduction was effected at the end of seven or eight months. The members of the academy were generally convinced that the reduction was complete, but M. Bouvier expressed his belief to the contrary.

Archives Gen. de Méd.

Seventh Annual Report of the Trustees of the Massachusetts State Lunatic Asylum.

Much credit is due to the people of Massachusetts for that intelligent philanthropy which prompted them to make a general provision for the insane poor of the whole state, and which has given to the sister states a noble example well worthy of imitation. The reports of the Trustees and Physician have always contained important statistical matter, but were never more interesting to us, as citizens of New-York, than at this moment. Buildings are now in the course of erection, under an act of the legislature of New-York, for a large State Lunatic Hospital at Utica — large enough to accommodate a thousand patients. It must be confessed, we cannot see the wisdom of concentrating in a single point, from the most remote as well as from the neighbouring districts of the state, a thousand lunatics, and of making that point the grand mad depôt for the whole state. Would it not be more judicious to divide the state into four or more districts, and thereby render the transportation of insane patients more easy? And would not such subdivision render the medical treatment and superintendence more thorough and efficient? A considerable share of experience authorizes us to answer these questions in the affirmative. Be they decided, however, by experienced and professional men as they may, the Legislature has determined on erecting one great "empire" Lunatic Asylum; and the only question that remains is, how can it be organized and conducted, so as to carry most completely into effect its ultimate designs? This not being the time nor the occasion for entering into such an important subject we will merely mention some of the points in the report before us that bear upon it.

In speaking of the admissions into their Hospital, the Trustees say, "The patients may be divided into three classes, with regard to admission. First, there are those who are sent by the higher courts, after acquittal of the criminality of violations of the law, on account of insanity. The second class includes those who are committed by the Judge of the Municipal Court of the county of Suffolk, and by the Judges of Probate of other counties, as being "so furiously mad as to render it manifestly dangerous to the peace and safety of the community that they should be at large. The third class consists of private patients, admitted by the Trustees when there is room for them." The two first classes, comprising lunatics tried for crimes, and paupers, must of course find a place in every State Asylum; but we think there are strong objections against including the third class of private patients; that is, those whose friends are able to pay for their care and support. While on the one hand it would not fail to excite a sense of shame and degradation in many insane patients to be sent to an institution professedly for paupers, and but for madness, criminals; so, on the other hand, the extraordinary attentions bestowed on pay-patients would most assuredly give rise to envy, a feeling not calculated to promote recovery. We therefore hope the admission of pay-patients into the State Asylum is not contemplated.

In the management of a large asylum for the insane poor, the most important subject, beyond all comparison, is that of employment — useful employment — manual labour. Among the thousand lunatics who will be inmates of the State Asylum, not more than a hundred, perhaps, will be subjects for regular medical treatment. What chance will the remaining nine hundred have, it may be asked, for recovery, or at least for improvement, without employment, that will give occupation to the mind or exercise to the body? The most gratifying thing in Dr. Woodward's report is "Table 13, showing the number of persons employed in the different departments of labour." The average number of patients in the Hospital during the last year was 223¼; the whole number 397. Of this last number no less than 179 were usefully employed. This exemplifies how much has been done by wise management, and suggests how much remains to be done by attention to what may be termed the moral and physical treatment of the insane.

One of the most interesting tables in this report is that which is made up of a series of observations on the influence of the moon on lunatics. It has been said there are more false facts than false theories in medicine; and never in our experience was human observation more fallacious than in the instance before us. We have known persons who have had the care of lunatics for years gravely assert "that they were always worst at the full and change of the moon," when the least observation would have convinced them there was not a word of truth in it. Tradition had informed them such was the fact as to lunatics in general, and therefore that it must be so with theirs also.

After a large number of careful observations, Dr. W. says, "From the earliest history of insanity to the present time, the impression has been general that the moon has an influence upon the maniac. In many old cases that have been brought to the Hospital, the friends have informed us that the patient was worse at particular times of the moon, and that this periodicity has been obvious for a long time. Our own experience, in a great number of such cases, has not confirmed the impression of friends."

Statistics of Cancer of the Uterus. — Dr. Lever has analyzed, in the Medico-Chirurgical Transactions for 1839, 120 cases of cancer of the uterus. He thinks the frequency of this disease, when compared with other uterine diseases, is as 1 to 7.

The cases, classified according to the ages of the patients, gave

25 to 30 . . .	3.3 per ct.	50 to 55 . . .	13.3 per ct.
30 " 35 . . .	15 "	55 " 60 . . .	14.16 "
35 " 40 . . .	10.83 "	60 " 65 . . .	.83 "
40 " 45 . . .	20 "	65 " 70 . . .	1.6 "
45 " 50 . . .	20 "	70 " 75 . . .	0.83 "

Thus the period when this disease is most apt to exist, is about the time when the catamenia cease.

The proportion of single women amounted to only 5.83 per cent., while that of the married was 86.6 per cent., and of widows 7.5 per cent.; which is entirely contrary to the opinion that celibacy favours the developement of this disease.

In 113 married women, 10 were barren; and among the remainder who had children, there were 122 miscarriages.

The table which refers to the previous condition of the uterus is still more important.

No previous disease, ...	20.8 per cent.
Amenorrhœa, ...	15.8 "
Menorrhagia, ...	1.66 "
Dysmenorrhœa, ...	54.16 "

The mean duration of 107 cases was a little more than 20 months: minimum 3 months, maximum 66 months.

Statistics of Pleuro-Pneumonia. By J. Pelletan, M. D.

These are derived from 75 cases observed during the years 1834, '35, '36.

1st. The frequency of simple pneumonia of one lung to double pneumonia is as 7 to 2.

2d. Pneumonia of the right lung is to that of the left as 2½ to 1.

3d. Pneumonia of the base of the lung is to that of the summit in the proportion of 1½ to 1.

4th. The period during which this disease is most common varies from 17 to 40 years.

5th. The disease is more common among males than females.

6th. The influence of exposure to cold in producing the disease was ascertained 7 times in 9 cases.

7th. Pneumonia was complicated with pleurisy 13 times in 14 cases.

8th. Frequency of the pulse is not an indication of the severity of the disease.

9th. Prostration and delirium seemed to belong to the cases where the summit was affected, and in such the termination was almost always fatal.

10th. In 21 of the 75 cases, the pneumonia assumed the bilious form.

11th. The treatment, by large and repeated bloodletting, was very successful during the two first stages of the disease : it failed in the third, or suppurative stage.

12th. Blisters after bloodletting were often very useful.

Archives Gen. de Med.

Cancer of the Brain in a Child. By P. H. Green, M. B. — Cancer of the Brain is an extremely rare affection ; it is still more rare in children than in adults. The following is the only example which I have seen in more than 800 cases of cerebral disease, occurring amongst children : —

Philip Proteau, 12 years of age, was admitted into the Children's Hospital, Paris, on the 18th of May, 1833. For the last six months this child had experienced convulsive attacks confined to the right side of the face, trunk, and right arm. Each access was preceded by headache and numbness of the arm and recurred frequently ; no other symptoms of disease of the nervous system was perceived. The treatment first employed, consisted in the administration of valerian, with cold or tepid baths. Soon after his admission, however, a number of biles appeared all over the body, and their existence seemed to exercise a salutary influence over the convulsive attacks. The latter diminished very considerably in number, but recurred, on the disappearance of the biles, with their usual frequency. The patient was now sent to M. Guersent's wards, where the following symptoms were noted :

After having experienced some headache for two or three hours, the boy felt some numbness in the right arm; he then felt a sensation as if something ascended from the back of the hand to the chest, and immediately afterwards the limb became affected with convulsive movements. The muscles of the right eye and of the right side of the face and chest were also convulsed. The access lasted for two or three minutes, and then ceased ; the patient never lost consciousness, nor presented any appearance of one labouring under epilepsy. During the convulsive movements, he was able to answer with the utmost clearness any questions, but the articulation of sounds was slightly impeded.

The disease was judged to be a simple neurosis, and antispasmodics were liberally administered. The oxyde of zinc, with extract of hyoscyamus, were first given, and the dose gradually augmented until on the 15th of July ; the child took 30 grains of each during the day ; cold baths were given at the same time. To these remedies the disease seemed to yield, and the accesses becoming much less frequent, the child left the hospital on the 2d of August. For the last 15 days, he had been perfectly free from convulsive movements.

The cure, however, was only apparent; the convulsions returned a few days after his departure, and he was re-admitted on the 4th of September. He now remained in the hospital until the commencement of 1834. During this period, the power of moving the right arm gradually diminished, and was at length completely lost: the boy frequently complained of pain in the left side of the head.

In this condition he continued until the 17th of March, when he suddenly fell into a state of coma, accompanied by contraction of the limbs. He was immediately bled, but without any relief.

March 19th. Face flushed; lips pale; complete coma; squinting of the right eye, the pupil of which is contracted, and motionless; left pupil dilated; upper extremities contracted; the forearm firmly flexed on the upper arm, this contraction being more strongly marked at the right side; the sensibility of that side also is diminished. Skin cool; pulse small, irregular, 76; respiration deep, regular, 20; tongue clean and moist; no vomiting or nausea; bowels constipated; abdomen retracted, and free from pain. No trismus or other convulsive movement. Purgative injection: seton in the neck.

During the day, delirium with plaintive cries.

March 20th. The symptoms continued without change.

March 21st. Skin cool; pulse regular, 144; respiration 20; right pupil extremely dilated, and insensible to the light; left pupil in its natural state; right arm firmly contracted; occasional delirium.

As the purgative enema had no effect, two drops of croton oil were administered. These, also, producing no effect, two more drops were given, which brought away two copious evacuations during the night.

March 22d. Pulse 132; right arm still contracted; in the night delirium alternating with somnolence. *Three drops of croton oil were administered.*

March 23d. The medicine has produced several stools; contraction of the right arm diminished, but the loss of vision continues in the right eye; the patient now answers correctly when spoken to.

On the 24th and 25th, this apparent improvement continued; but on the 26th, he again became delirious: the face was highly flushed, and he cried constantly. *Two drops of croton oil were administered.*

March 30. Complete coma; respiration stertorous; pulse insensible; sensibility and motion entirely lost; strabismus. These unfavourable symptoms followed the application of leeches behind the ears, and terminated in death at 7 P.M.

Post-mortem examination 38 *hours after death.*

Head. — Skull well formed. On the left side the dura mater adheres to the cerebral membranes, to the extent of two inches square. On the surface of the middle lobe of the left hemisphere, at the point where the dura mater adhered, is seen an encephaloid tumour of the size of a hen's egg. It is irregular in form, enclosed in a cyst, and contains numerous bloody points not larger than pin's heads; but it is not softened. The tumour extends into the lateral ventricle, and has destroyed the whole of the left corpus striatum. The nervous tissue surrounding the tumour is completely diffluent; and, behind, there is a serous-looking cyst, which contains about three ounces of clear fluid. The cyst is merely separated from the ventricle by a layer of membrane resembling a serous one; the adjacent nervous tissue is but slightly softened. Optic nerves intact; rest of the brain and spinal marrow healthy.

Chest. — The viscera contained in this cavity are quite healthy.

Abdomen. — The mucous lining of the great curvature of the stomach is softened. The mucous membrane of the small intestines is of a rosy colour, and somewhat softened also; in several points they contain mucus tinged with blood. The other viscera are healthy.

[The cerebral and other nervous symptoms observed in this case, correspond with those noticed in the cases of tubercles in the brain, reported in Vol. I. Indeed, this is what might have been anticipated; for a tumour developed in this organ can only act as a cause either of compression or of irritation. The true source of diagnosis is a careful examination of the chest. By referring to the cases already mentioned, it will appear that tubercles existed in the lungs in every instance, and that in most of the instances they were so far advanced in their progress as to be detected during life without difficulty.] — EDITOR. *Lancet.*

Tubercular Meningitis. — By P. Hennis Green, M. B.

Case I. — Lefere, æt. 6 years, admitted into the Children's Hospital, Paris, Sept. 14th, 1835. Fine healthy looking child; father scrofulous, mother healthy. The child had been brought home from nurse, at the age of four years, and since then his parents had remarked that he was disinclined to play or move about. In July and August, he was slightly indisposed, coughed a little, and occasionally was unable to pronounce words distinctly. Sept. 11th. The child was frightened, and soon after vomited; this recurred on the 12th. No active treatment had been employed. Sept. 13th. Somnolence, which continued up to the time of admission; face alternately pale and flushed; obstinate constilation.

Sept. 16th. Deep coma; face flushed; skin rather warm; no peculiar heat of forehead, or pulsation of temporal or carotid arteries; eyelids closed, but easily opened ; pupil natural, slightly movable ; no strabismus ; eyelids occasionally convulsed ; sight and hearing completely lost. Mouth cannot be opened from a rigidity of the muscles ; deglutition difficult ; both arms somewhat stiff, with automatic motions of the fingers of the left hand ; lower extremities relaxed ; muscles of neck and back extremely rigid. Sensibility of right arm completely lost, left nearly so. Pulse full, irregular, slow, 64. Respiration 18.24, sonorous. Had one evacuation yesterday, and urinated two or three times. Abdomen retracted and free from pain.

Half an hour afterwards, the face was of a bright scarlet tint, which passed rapidly away leaving a stern frown on the countenance ; the trismus gave way allowing an examination of the tongue, which was moist and clean. The child opens his eyes, but cannot see ; eyeballs insensible to touch. Left arm now relaxed ; lower extremities sensible. Tisane ; injection ; sinapisms to legs.

Sept. 17th. Insensible as yesterday ; eyelids sometimes closed, sometimes half open ; eyeballs roll obliquely upwards and outwards ; pupils contracted, slightly oscillating ; no strabismus ; colour and expression natural ; appearance of deep sleep. Lips clean and dry ; no trismus ; breath foul ; upper extremities relaxed ; abdomen greatly retracted ; back and neck less stiff than yesterday. On raising the patient, the face becomes of a bright scarlet, and the pulse small, quick, and irregular ; pulse ordinarily, full and regular, 108. Respiration 22, sighing ; skin cool ; no unnatural pulsation of carotids, &c. Face very red, with alternations of paleness. One hard evacuation from injection.

M. Guersent remarked, that as the most active treatment in acute meningitis, had almost invariably failed, he would now do what he had never before dared to do, and leave this case to *nature.* He would thus see how long the child would hold out, and perhaps learn how far death had been accelerated by the remedies commonly employed ; the longest case that he had ever seen, lasted only thirty-one days.

The prescription therefore was dog-grass, oxymel, injection of milk.

Sept. 18th. Same coma ; eyelids wide open ; expression natural ; pupils contracted and dilated alternately ; skin slightly warm ; pulse regular, 120 ; respiration 30. On motion, the blood rushes to the face, and the child sighs. No convulsions, no moaning or crying ; sight and hearing lost ; left arm a little sensible, and when pinched the fingers move ; but neither the muscles of the arm or face, give any signs of consciousness ; right arm completely paralyzed ; lower extremities paralyzed. Lips clean ; abdomen not painful, retracted. From injection, one copious solid stool. Continue treatment.

Sept. 19th. Patient dying ; face dull pale colour ; eyelids open ; eyes much injected, occasionally turned up; pupils contracted and dilated; respiration embarrassed, with tracheal rattle, 50; pulse nearly imperceptible; no convulsions; extremities all paralyzed, but soles of feet strongly arched, resisting extension; fingers flexed, not stiff; a few sudamina; skin very warm and moist. At six o'clock, the child swallowed fluids, but with difficulty; he died 20 minutes after the visit.

Post-mortem Examination 24 hours after death. Anterior surface of the body and face, pale; posterior marked with blue patches; arms relaxed, fingers flexed and stiff; nails blue; lower extremities very rigid; toes and soles of feet strongly flexed as before death.

Head. — No fluid in the great arachnoid cavity, but on removing the brain about two ounces of serum tinged with blood was found at the base of the cranium, (escaped probably from the ventricles.) Arachnoid covering brain moist; vessels ascending from base of brain deeply congested with dark blood; most marked on the left side.

Left Hemisphere. — Here opposite the antero-superior edge of the ear, there is a patch of yellow infiltrated matter which extends with the pia mater between the anterior and middle lobes to the commisure of the optic nerves; there is also a layer of yellow lardaceous matter which ascends for about two inches into the left fissure of Sylvius; here the pia mater is consideraly thickened, and contains a number of yellow granulations, either mixed with, or separate from, the larger mass. It is also closely adherent to the cortical substance, which cannot be removed without being broken down by the handle of the scalpel; this portion of the brain is of a pink colour and softened. The lardaceous matter varies considerably in thickness; at one point it is one quarter of an inch thick, and bears a close resemblance to the scrofulous matter deposited under the pleura. The pia mater, where it can be distinguished between the granulations, is much injected. Between the convolutions in the neighbourhood of the lardaceous matter, there are numerous granulations which at first sight might be taken for air-bubbles; to each granule the cortical substance is adherent. Nearly in the centre of the surface of this hemisphere, there is a broad patch of sero-sanguineous effusion in the pia mater, and below this again, a patch of granulations, the cellular membrane being highly injected, thickened, and adherent to the brain. The substance of this hemisphere was minutely divided, but no trace of tubercle were discovered in its interior.

Right Hemisphere. — Nearly the whole surface is covered with an irregular sero-sanguineous effusion, which is very dark in some places. On the centre, there are two or three large isolated granulations, along the track of one of the vessels; between the convolutions in the immediate neighbourhood of these tubercles, the pia mater is deeply injected, but not adherent to the cortical substance, although the latter is softened; the cellular membrane into which the sero-sanguinolent fluid is effused, is very tender and easily detached from the brain. No tubercles in the substance of this hemisphere; medullary matter much injected, and the pia mater which dips in among the convolutions forms so many deep red lines. Plexus choroides healthy; lateral ventricles rather enlarged, containing a small quantity of reddish serum; septum lucidum, fornix, and parietes of ventricles, firm. Membranes of cerebellum healthy, but there are a few granulations on its lower surface. Pons Varolii normal.

Spinal marrow healthy; posterior vessels however, more injected than anterior. Tubercles in lungs and bronchial glands; in the liver, and externally; also in the spleen.

Mucous membrane of stomach slightly injected and softened; small intestines healthy; large, mucous membrane deep purple and softened; kidneys, &c. healthy; no tubercles in mesenteric glands.

Case II. — Bouillett, æt. 4 years, admitted Aug. 30th, 1835. Mother died of phthisis at the age of 32; father very subject to coughs. The boy enjoyed good health, and was gay, until three months ago, when his mother died; he was then suddenly seized with convulsions, which lasted three hours, but did not recur nor leave any unfavourable symptom. Aug. 25th. Suddenly seized with headache, became dull, and vomited for five days in succession. The second day confined to bed, constantly complaining of his head, and placing his hand on his temples; also of pain in abdomen. Constipation.

On admission, the child complained of his head; occasional drowsiness; pulse irregular, 72; great thirst. Cold lotions to head; sinapisms to legs and feet; purgative injection.

Aug. 31st. Child lies on his side with knees drawn up; uneasy, turning from side to side; face pale; lips dry; tongue moist and furred; eyes natural; no strabismus; no pain in head; sighs very frequently; skin slightly warm; pulse 74, irregular; respiration slow 10, sighing; intolerance of light; no vomiting since admission; deglutition easy; no thirst; no lesion of sensibility or motility; four stools. Six leeches to temples; cold lotions to forehead; injection.

Sept. 1st. Symptoms as yesterday; occasional wandering and crying during the night. A current of cold water was kept constantly flowing on the crown of the head.

Sept. 2nd. Patient apparently comatose, yet when spoken to opens his eyes and answers in a clear, slow voice; face cool; forehead warm, although the cold water runs constantly over the head; no headache, but light painful; constantly carries hand to head; right eyelid contracts strongly when raised by the finger, left offers no resistance; pupils sensible, sometimes contracted, sometimes a little dilated. Respiration 20, sighing, irregular; pulse 72.78, irregular. No changes of colour, no convulsions; rigidity of body and limbs; sensibility of limbs unimpaired; fits of laughter yesterday alternating with delirium and sharp cries; no pain in abdomen on pressure; one dark offensive dejection; urine involuntary; castor oil, half oz.; emolient injection; oxymel.

Sept. 3d. Quiet as yesterday; strabismus now evident; pupils not dilated; sees well; forehead very warm, but no pulsation of the arteries; no pain in head, only about the eyes (no reliance however can be placed on the child's answers;) delirium last night; now answers distinctly but slowly; no convulsions; sensibility of face acute, that of extremities diminished. No vomiting; tongue moist and white, not trembling, (the peculiar trembling of the tongue when projected in typhus, never occurs in hydrocephalus;) pulse eighty, irregular in force and rythm; respiration twenty-four, slightly sighing. The boy now carries his hand to his head and complains of headache. Repeat castor oil; continue irrigation.

Sept. 4th. As yesterday; pulse small, 140; respiration 26, irregular; has passed two yellow fluid stools. Continue treatment; the water which constantly falls on the head from the height of one foot is of the temperature of the room.

Sept. 5th. Evidently more feeble; face pale and sunken; voice feeble, answers extremely slow; sighing and plaintive moans from time to time; squinting continues; pupils largely dilated; whenever he is moved the body continues to become stiff, and the arms now slightly resist extension; no paralysis yet. Skin cool; pulse very feeble, 156; respiration 26; no convulsions; abdomen excessively retracted; one fluid stool. When asked to eat, said he should like an egg. Before quitting the hospital, I again examined the child, found the skin quite cold, the pulse insensible, and the neck perfectly rigid; he seemed to be at the point of death.

Sept. 6th. Moaning and crying all night; answers rationally; complains of hunger and thirst; left orbicularis palpebrarum firmly contracted drawing up the angles of the mouth, and giving an expression of a grin to the face; right pupil strongly contracted, left excessively dilated. No contraction or paralysis of limbs; right arm much more sensible than the left; picks his mouth and nose as before. Skin of body and forehead cool; no pulsation of arteries of head. Pulse very small and quick, 148. 150; respiration 36, without sighs; no delirium; much less stupid than yesterday. M. Guersent ordered the irrigation to be suspended in order to see if the child would sleep. Almond emulsion; decoction of marsh mallows; moderate diet.

Sept. 7th. Child looks much better; cried but little during the night; has slept a little; constantly carries both hands to summit and back of head, or picks the nose and lips; left cheek flushed, right pale; right pupil much more contracted than left; mouth deviates when he cries; no stiffness or paralysis, but slight trembling of arms on motion; no delirium, but does not answer as clearly as yesterday; skin a little warm; pulse 130, unequal in force; respiration deep, slightly irregular, 40; abdomen retracted; no stool; no vomiting. Decoct. mallows; emulsion 4 oz. Two injections containing sulphate quinine 8 grs.; extract of bark 8 grs.; resume the irrigations.

Sept. 8th. Slight convulsions yesterday evening; coma; pupils largely dilated; mouth spasmodically shut; face covered with abundant perspiration. The child has a slow automatic motion of the hands towards the face, and every now and then a convulsive shudder, the arms becoming stiff, the fingers strongly flexed, and the thumbs concealed beneath them: face and mouth occasionally drawn to the right side; skin warm; pulse imperceptible; respiration 42; no evacuations, but urinates freely; retraction of abdomen ceased.

Sept. 9th. Convulsions last night; insensibility perfect; left orbicularis muscle does not resist the finger; left pupil widely dilated and insensible; right orbicularis contracts; right pupil contracted and sensible; cornea dull, growing opaque; mouth and tongue excessively dry and brown; no stiffness; no paralysis; cutaneous sensibility preserved; pulse more distinct than yesterday, but excessively small and rapid; respiration regular, 34. Continue remedies.

Sept. 10th. The boy lies quietly in bed, with a constant trembling motion of the hands; no convulsions; arms occasionally perfectly stiff, and fingers flexed; deglutition of fluids; pupils as above; face pale; forehead very warm; right cheek warm and moist, left deadly cold; left arm warm and relaxed, right cold and stiff; no stiffness in lower extremities; no evacuation; pulse 150.156; respiration 36, pretty free. At 3 P. M. the face and chest were moist, forehead burning hot; variations in the temperature of skin nearly as above, but more marked; respiration getting embarrassed, a fatal sign. Death at half past 6 P. M.

Post-mortem examination 24 hours after death. *Head.* Membranes lining the upper surface of the brain dry and injected; convolutions flattened as if pressed against the cranium; 2 or 3 drachms of fluid in the occipital fossæ. Anterior and posterior lobes of cerebrum healthy; but near the fissure of Sylvius, the pia mater was thickened, firm, of a yellow opaque colour, and contained numerous miliary tubercles. Near the sides of the hemisphere this appearance was gradually lost, but the number of miliary tubercles was particularly great on the right side. The pia mater between the convolutions was deeply injected, but free from granulations. On the posterior edge of the left middle lobe there was a considerable exudation of sero-sanguineous fluid into the pia mater, and in one of the anfractuosities 3 tubercles the size of peas. The cortical substance of the brain was moist and not firm. The inferior part of both lobes was pale and diffluent; the central portions, corpus callosum, fornix, &c., were also quite soft; the walls of the ventricles were soft; they contained but a small quantity of fluid. Cerebellum healthy; but the pia mater which passed from the cerebrum to the cerebellum, near the crura of the latter, was infiltrated with the yellow matter before described. *Spinal marrow.* Membranes healthy; no granulations; upper portion firm; inferior much softer, but not injected.

Two small tubercles were found in the chest; one in the lungs, and one in a bronchial gland.

Mucous membrane of stomach perfectly healthy; that of small intestines injected in portions, softened throughout; a small ulceration was discovered at the commencement of the jejunum, and some of Peyer's glands were red and tumid, but none ulcerated. No tubercles in mesenteric glands, or in other parts of abdomen: all the other viscera healthy.

Lancet.

Abscess in the sub-peritoneal cellular tissue, resembling Acute Peritonitis. Cured by an opening at the umbilicus. By M. BRICHETEAU.

Miss Henrietta D., æt. 17 years, of a scrofulous diathesis; her mother was rickety and scrofulous, and her father advanced in age: she also had suffered from dysmenorrhæa.

May 17, 1839. Seized with acute pain in the abdomen, which continued during the night, causing her to cry out, and preventing sleep. The following night she was in the same condition. Called to attend her on the 2d day, (20th.) I found the abdomen so tender that she could not bear the least pressure on any part of it; heat of skin trifling; pulse hardly accelerated; frequent bilious vomiting; great anxiety, without much change in the countenance.

Twenty leeches to the abdomen, 15 *to the anus; hip bath; emollient injections and fomentations. Absolute diet; mucilaginous drinks.*

May 21st. Ordered a few drops of laudanum of Rousseau, to quiet the vomiting and anxiety, from which she suffered much.

This treatment (omitting the leeches) was continued for several days, and with apparent success. The pain in the abdomen and the vomiting ceased; pressure no longer caused pain. But the pulse remained accelerated, 100 a minute; the respiration frequent, 44. The appetite returned, and the patient began to take soup after a week had passed.

But the pain in the abdomen soon returned, with swelling and tension; inability to sit up; vomiting; fever; pulse more frequent. The patient lay constantly on the right side; thirst; much fever; constantly complaining, without indicating the precise seat of her suffering; two or three alvine dejections daily. *Leeches* were again applied, particularly over the region of the spleen, where the pain and tension appeared to be most marked. *Half-baths; fomentations; emollient injections; rigorous diet.*

The pulse became more frequent, 120.140; varying however, as also the pain in the abdomen, which would disappear in one spot and return in another; thirst always urgent; vomiting less frequent; sleep tolerable; ability to sit up a quarter of an hour each day; constipation in place of the slight diarrhœa; urine abundant, without particular character. As this new attack subsided, the disposition to vomit did not subside entirely; the tongue continued coated; the thirst considerable; the abdomen distended, but sonorous only on the left side. The patient lay constantly on the right side.

On the 18th day an attack of acute pleuritis supervened, which was treated with a blister and with calomel.

The patient continued to remain in about the same condition; pulse 120; skin rather hot; complexion clear; irregular accesses of fever and restlessness during the night; still some sleep. The abdomen constantly distended, and sonorous only upon the left side; flatness on the right.

June 1st. M. Marjolin called in consultation; fluctuation; unfavourable prognosis; supposition of peritonitis with effusion. Ordered frictions with mercurial ointment and extract of belladonna; calomel in small doses.

June 12th. Skin of the umbilicus thinned and pointing. Size of abdomen somewhat less: tenderness diminished.

June 14th. An abscess discharged itself at the umbilicus; an enormous quantity of pus, estimated at several wash-hand-basins full, escaped. The patient became faint, but soon recovered, and fell quietly asleep. The matter discharged was healthy pus.

16th. M. Marjolin was again called in consultation; on pressing the abdomen a large quantity of healthy pus still gushed out. The patient had still nausea and vomiting, with partial cold sweats. She was ordered nourishing diet, quinine, &c., and to lie upon her face, the abdomen being covered with a poultice.

26th. The patient has experienced a relapse; she has become restless, and complains of pain; she is delirious, and has been vomiting the abscess had ceased to discharge.

29th. She is much improved, but the abscess has not again discharged; the urine has begun to deposit an abundant mucous sediment. Pulse 120.

July 8th. After some further variations in the condition of the patient, convalescence has now fairly commenced; pulse 96. In fact, the patient having spent the months of August and September in the country, has returned to Paris, perfectly recovered. *Gaz. Med.*

Post-mortem Appearances found after Burns. — Mr. Long, in a very interesting Paper, read before the Liverpool Medical Association, has collected and compared a large number of post-mortem examinations, in which death was the result of burns. The following will be found to be a condensed summary of his conclusions on this subject: —

He divides his cases into three classes. 1st. Those that died within 48 hours, (although this period is variable,) from the irritation of the cutaneous envelope and the repercussion of the fluids to the interior. 2d. Those that died after reaction, had taken place with phenomena referable to the nervous system, or to the production of inflammation in those organs which are already the seat of congestion; these phenomena being ordinarily revealed about the fourth or fifth day. 3d. Those patients who survived the period of irritation and congestion, and that of reaction and inflammation, to fall victims to long protracted suppuration, with such lesions as are commonly found to exist in those who die of chronic diseases, especially profound alterations of the mucous coat of the small intestines. Finally, according to M. M. Margolin and Olivier, patients may die after the wounds from extensive burns, were nearly or entirely cicatrized. Delpech, in examining such cases, has discovered no organic lesion to acconnt for death, but thinks it may be attributed to the disturbance of the functions of the skin.

I. Eleven post-mortem examinations of the first class, all presented marked congestion of internal organs. They all terminated fatally within 48 hours, and eight of them which terminated within thirteen hours, presented more marked congestions than the three which survived several hours longer. Seven of these were females, and only two males; in two, the sex was not specified; seven were under fifteen years of age; four above 15. In one, no examination of the head was made; while, in

10, lesions of various extent were found from simple engorgement of the sinuses to the effusion of bloody serum into the ventricles and at the base of the brain. In one, no examination of the chest was made; in one, no lesion was found; while in nine, lesions principally indicating congestion to various extent existed. The same was true, precisely, with regard to the abdomen as to the chest.

II. Fifteen cases terminated fatally during the second period, viz. at variable periods, after 48 hours from the time of the accident. Of these, three died during the period of reaction, and twelve during that of inflammation. In seven, the internal lesion corresponded more or less in locality to the external injury. Twelve of the cases were females and two males; in one the sex is not specified. Seven were under fifteen years of age, and eight above that age. In six of these cases, lesions of the brain were found; in three, this organ was not examined. In not more than one of these cases did distinct inflammation of the brain (arachnitis) exist, the remainder exhibiting instances of congestion more or less marked. In seven cases, lesions of the organ of the chest were found; in three, this cavity was not examined. These lesions were of a much more marked inflammatory kind than those of the brain; in five cases, acute inflammation of the lungs or pleura existed. In ten cases, lesions of the organs contained in the abdomen were found to exist; no mention of any lesion in one; nothing found in four; so that probably these organs were examined with more or less care in every case. In these cases the mucous membrane of the stomach was inflamed four times and in one perforated; mucous membrane of the intestines inflamed seven times; in two, it was gangrenous; in two the duodenum was perforated; in four cases acute peritonitis existed.

III. But one of the cases terminated during the period of exhaustion; a child æt. 8 years, who died on the 35th day. In this case, recent inflammation of the pleura was the only lesion noticed.

From the above statements, the following conclusions may be derived: — 1st. That more females are burned than males, and that of those burned, a greater proportion of females die than males. This is easily explained; the occupation of females exposing them more to fire, and the nature of their dress rendering their burns more severe. 2d. That death may take place during the period of either congestion and irritation, reaction and inflammation, or exhaustion. 3d. That the greatest number, nearly half, die during the period of congestion; nearly one-third during the period of inflammation, rather more than one-fifth during the period of reaction; and very few during the period of exhaustion. 4th. That more individuals above the age of fifteen, than under that age, die during the period of inflammation; more die under that age than above it, during the period of reaction; and that during the period of congestion, the proportion of deaths above or below fifteen years, offers but a slight difference, there being fourteen cases above fifteen years, and eleven cases under that age. 5th. That in almost every burn, indeed in every burn, lesions of one or more of the viscera contained in the three great cavities exist, being, according to their frequency, as follows: abdomen, chest, head. 6th. That the lesions of the different tissues contained in the abdomen, are in the following order: mucous membranes, serous membranes, parenchymatous tissues; in the chest it is quite the reverse, viz. parenchymatous tissues, serous tissues, and lastly mucous; in the head—membranes, brain. 7th. That the seat of internal inflammation corresponds sufficiently often with the external position of the burn, but that in a precisely equal number of instances, no such correspondence can be traced. — *Med. Gazette.*

Acute Abscess of the Pharynx. By C. FLEMMING, M. D.

The premonitory symptoms of this disease according to Dr. F., are local uneasiness, which is common to all affections of the throat, complained of, or otherwise, according to the age of the child, and on examination not accompanied by proportionate visible lesion. The *essential* symptoms often supervene very suddenly, indicated by derangement of the cerebral, circulating, and respiratory systems, alternating with a comparatively healthy condition of those systems, according to the alteration in the position of the individual. Fixed and retracted state of the head; with rigidity of the muscles at the back of the neck, and more or less locked state of the jaws. Painful deglutition; impossibility of swallowing solids, and fluids convulsively darted forward through the nose and mouth. Repeated acts of deglutition without the presence of any fluid in the mouth, and on examination of the fauces, a firm projecting tumour felt beyond the base of the tongue, and if seen, presenting a smooth, rounded, highly vascular appearance behind the soft palate; usually occupying the median line, but occasionally inclining to either side. These essential symptoms accompanied with the ordinary characteristics of suppurative fever.

The following cases illustrate this disease:

The first case was a boy. His age was three years and a half, and in appearance he was healthy. The premonitory symptoms of his attack, at first mild, after about thirty-six hours, assumed most intense severity, and without unnecessarily particuralizing their progress, it may be stated, that the most aggravated form of high inflammatory fever set in, principally engaging the cerebral organs, and requiring the most energetic treatment to combat it. On about the fourth day, convalescence appeared established, and Dr. Crampton (whose valuable assistance I had throughout the progress of this case,) discontinued his daily attendance.

From day to day a peculiar fixed position of the head, and stiffness in the neck, now attracted attention. The head was drawn back. The muscles, at first tense, became completely and permanently rigid, and the movements of the head painful, and remarkably limited. Soreness in the throat was complained of, and also great difficulty in swallowing, at times accompanied with violent spasmodic efforts. There was no cough, and the voice remained perfect. The articulation became remarkable, — the words being as if drawled out with pain and difficulty, and at times perfectly unintelligible.

Repeated and careful examination of the fauces and neck, could not detect any apparent local cause for those symptoms, which, with varied degrees of intensity, advanced, producing equally alarming constitutional disturbance and debility.

At first, disposed to attribute them to concurrent local causes, such as the quantity of mercury administered during the acute illness of the child, the cold from the renewed application of ice to the head, or some partial internal effusion, the result of the acute inflammatory attack, more serious mischief was now apprehended from their increasing severity and permanency. The treatment adopted was principally with the view of promoting the absorption of any fluid effused, and consisted chiefly in the exhibition of mild mercurial alteratives, and the application of counter-irritants to the region of the occiput.

On about the tenth day, the symptoms had reached their acmé; the child, emaciated and weakened, had no relish for food, and appeared to drink merely to allay thirst, the efforts at swallowing being convulsive and painful. He was now in a perfect state of somnolency, regardless of every thing about him, when accidentally, whilst sitting beside his bed, I perceived, that *position* most remarkably influenced the severity of the prominent symptoms. Stupor in the recumbent posture, almost amounting to perfect coma, in the sitting, or even semi-erect, resolved itself into a comparative sensibility. Respiration, slow, laboured, and stertorous, or rather roaring, (as described by the attendants on the child,) in the former position, became comparatively tranquil in the latter, and a pulse in the one, ranging only a beat or so above forty, in the other, assumed a more natural character. Again, fluids were more frequently darted convulsively forwards through the nostrils or mouth, than passed into the stomach, or were ejected, as in the act of vomiting, and the recurrence of the symptoms of cerebral compression took place on returning to the recumbent posture, which for the last three days had been almost the permanent one.

I now considered that this relation of symptoms might still be caused by mechanical obstruction in the pharynx, although repeated examinations on former occasions did not lead me to this conclusion. An additional obstacle presented itself in the fixed position of the jaws, so that it was only by considerable force I could so far separate them as to admit of even getting my little finger between them. On forcing it back, I accidentally, but distinctly, felt a tumefaction beyond the base of the tongue, giving, as well as a compressed finger could indicate it, a sense of yielding. To get a view of it, was utterly impossible. The soft palate and uvula were easily discernible, but the depression of the tongue gave so much pain, and the separation of the jaws was so very limited, that further investigation was totally out of the question. Indeed, in addition, the evidence. even from touch, was necessarily momentary, from the severe paroxysms of dyspnœa attendant on the examination.

Although I had never heard of, nor witnessed a case of the kind before in children, it at once occurred to me, that this might be an abcess at the back of the pharynx, mechanically producing the above symptoms, and having stated this as my opinion to the family, the assistance of Dr. Crampton and Mr. Cusack was immediately procured. After a patient, though extremely unsatisfactory examination, they coincided in opinion with me as to the presence of a tumour in the situation alluded to, and it was determined that I should perforate it with an explorator which I had provided for the purpose, with the view of ascertaining its actual nature ; a doubt existing on this head, not alone from the extreme firmness of the tumour communicating a very indistinct sense of fluctuation, but also on account of its probable anomalous nature from the previous acute and present chronic cephalic symptoms. With every necessary precaution I accomplished this object, though with considerable difficulty, and to my great gratification, witnessed the sudden gushing forth of a large quantity of healthy purulent matter. The whole features of the case were almost instantaneously altered. The somnolency was removed, deglutition was facilitated, and more cheering prospects manifested themselves. Nourishment was freely given throughout the day, and quinine administered in small and repeated doses.

At my evening visit I perceived that the stertorous breathing had returned, and that the more prominent symptoms which had ceased since the operation, were again in some degree present. I examined the throat, and fortunately found the separation of the jaws now accomplished with ease. The abscess was again filled, with the opening closed. I introduced a carefully protected sharp pointed bistoury into the site of the opening, and freely enlarged it downwards. The relief was instantaneous. I now directed the trunk of the child to be elevated as much as possible, and the head depressed. The night was passed comparatively tranquil; the quantity of matter which escaped through the mouth was considerable, largely staining the pillow. The next day, the boy was able to play with his brothers, and subsequently his improvement was progressive, though slow.

He is now a fine healthy boy. I do not particularize the treatment adopted during his convalescence; there was nothing peculiar in it, its principal object being to improve the general health.

The next case, which I shall select, is that of a boy aged seven months, proving the remarkable fact of the occurrence of such an affection during the first period of childhood, as the former does, during the second.

In April, 1838, I was sent for to see this child by the father, who stated that he had great apprehension his little boy was labouring under water on the brain: that many children of his immediate family had fallen victims to it, and that the symptoms under which this child laboured, were exactly those by which the attacks of the former had been ushered in. On visiting the child, I found every indication of gastro-enteric derangement, so common at this period of life, and very suspicious cerebral complication, rendered more so from the fact of hereditary pre-disposition. In addition I found, that some lymphatic glands, on the left side of the neck near the angle of the jaw, were enlarged and painful, evidently depending on ulceration behind the corresponding ear. The mouth, fauces, and pharynx were free from lesion, and one of the incisors on the lower jaw had just made its appearance.

The treatment was principally directed to the abdominal system, and to the relief of the glandular irritation noted. After a few days, improvement was so manifest, that I had omitted a visit on Friday.

On Saturday morning I received a hurried message to see the child, and found that the more alarming symptoms had all returned during the previous night, that the restlessness was incessant, — that the vomiting was constant, — that the flushing of the face was renewed, — that the breathing was loud, laboured, and very irregular during the night, — and that he constantly started from most disturbed sleep, which would only be tolerated in the nurse's arms; that every attempt at putting him in the cradle aggravated the pulmonary symptoms. In addition I observed that the head of the child was rather drawn back, and that the chin projected somewhat unnaturally. He immediately screamed when the jaws were attempted to be separated, and in the region of the neck there was the greatest tenderness, particularly over the glands above alluded to. The integuments were free from discoloration, yet still the tumefaction was decidedly increased, and the slightest motion of the head appeared to give great pain.

At the moment, I was disposed to attribute the recurrence of those symptoms to a smart attack of inflammation in these glands, and was led to hope that the combating it, would relieve them. The treatment was accordingly directed with that object in view. Leeches were applied ; fomentations and poultice used, and a smart mercurial purgative administered.

Sunday.—Night spent wretchedly ; no alleviation of symptoms, with the exception of those connected with the inflamed glands : they are better : the other symptoms are, if possible, more aggravated. In addition to those enumerated in the report of yesterday, there is now a gurgling noise in the fauces as if from accumulated mucus, and throughout the lungs there is evidence of considerable effusion into the larger bronchial tubes ; there are repeated and apparently painful and difficult efforts at swallowing, accompanied with frightful paroxysms of dyspnœa occurring at irregular intervals, during which the countenance becomes suffused, purple, and almost convulsed, and it is remarked that those immediately supervene on attempting to place the child in the cradle ; there is incapability of sucking, though great desire for the breast, the nipple of which is seized with avidity, and equally rapidly ejected with a sudden and spasmodic regurgitation of the milk ; any fluid placed in the mouth, either remains for a short time, and then gradually dribbles out, or otherwise produces a paroxysm accompanied with similar phenomena. At the moment of my visit, the repeated exertions of the child at the attempt of swallowing, the severe dyspnœa, and the great accumulation of mucus in the fauces, with the very restless state of the child, led me to apprehend the supervention of a fit of convulsions. I thought I recognized some of the features of the above case, when from some unintentional act in my examination, a most severe paroxysm supervened. The child appeared suffocating : I rapidly passed my finger into the fauces, and feeling a fulness, I made pressure against it, which was increased by a convulsive effort of the child ; a sudden discharge of purulent matter got exit through the nostrils, and temporary relief was obtained, until I procured the additional assistance of Sir Henry Marsh and Mr. Cusack.

Perhaps about an hour or so had elapsed from the above occurrence when we met in consultation. At this time the breathing, though principally nasal, was more tranquil; and a small quantity of fluid had been swallowed, but with much difficulty. The appearance of the child could not but make an impression upon those who saw him. The nostrils were filled with matter which trickled down the lip; any attempt at placing him in a recumbent posture was instantly followed by frightful dyspnœa, rendered still more serious from the great accumulation of mucus in the fauces. I directed attention to the throat, but notwithstanding every effort, no accurate view could be had of the back of the pharynx. The narrow space behind the root of the tongue was filled with pus and bubbles of frothy tenacious saliva, to clear which away repeated unsuccessful attempts were made. Here the freedom of separation of the jaws allowed of free, though rapid examination of the fauces, but the back of the pharynx could not be seen. I, however, felt a distinct tumefaction, and failing to puncture it with the grooved curette, as in the former case, I was obliged to rest satisfied with what had been done, arranging to watch the progress of the symptoms, and to support the child by every possible means, by introducing fluids through a tube passed through the nares, and by broth enemata; to be prepared, if necessary, to open the trachea should any fresh symptoms of suffocation supervene; and in addition, to keep constantly cleared away the accumulating phlegm at the back of the throat.

By visiting at short intervals, and carefully enforcing the above injunctions, the strength was supported, and the symptoms to a certain extent stayed. Next day they were stationary, though it was quite evident that considerable obstruction yet existed in the throat; however the strength was improved, and the countenance of the child decidedly better. Another day passed without any material change, when the dischargefrom the nostrils ceased, and evidently, any opening made, or rather the ruptured portion of the sac had closed. Difficult respiration in any but the erect posture, or on an inclined plane with the head considerably depressed, recurred. Perfect inability of sucking and swallowing again set in, and suffocation appeared impending, when Mr. Cusack saw the child, and was still more satisfied of the presence of a tumour at the back of the pharynx. It was so tense and so unyielding, that did not the history of the case justify the presumption that matter was present, the absence of any sense of fluctuation would have caused extreme doubt; another difficulty presented itself in its being below the level of the tongue. The very limited space to operate in, together with the risk of wounding the neighbouring vessels, on account of the disposition of the swelling rather from the meridian line towards the left side, suggested the propriety of selecting some instrument the action of which could be accurately gauged. That which I had used in the former case was objectionable not alone from the want of sufficient command of it from its conformation, but also from its shape. It was agreed that delay might be safely hazarded until next day, leaving word, however, that should any urgent symtom set in, I should be informed.

Next day, I found that throughout the night great apprehensions were entertained lest suffocation should have taken place. All other bad symptoms remained, if not aggravated, at least stationary; and having arranged in the interim with Mr. Cusack, an instrument was contrived which suceeded most admirably. It consisted of a trochar about four inches long, one extremity of the canula being slightly curved, the other with a ring on its upper surface to receive the fore finger; into this canula was passed a jointed stilette, with, at its opposite extremity, a ring for the thumb, and a movable screw to graduate the projection of its point. Mr. Cusack having firmly supported the head of the child, I passed the forefinger of the left hand, towards the back of the pharynx, there resting the point of it, and guiding the armed trochar with the concealed stilette along it, accurately fixed it on the tumour, pressed forward the stilette to its limited mark, and withdrawing it by an opposite manœuvre, was gratified to see *a quantity of healthy purulent matter darted forwards on the child's clothes.*

The relief was immediate; the hæmorrhage trifling; and the result permanently successful. In this case it was unnecessary to renew the opening; the discharge, at first temporarily ceasing, returned, and the cure was rapid.

The boy is now a fine healthy boy. The constitutional treatment was similar to that adopted in the last case.

Such is the history of two extreme cases of *acute* abscesses at the back of the pharynx, occurring in children, selected from others of the same nature, which I have witnessed within the last three years, and necessarily with opportunities comparatively limited. I have brought them forward as remarkably illustrative of the symptoms attendant on their progress; as novel at that period of life, in the records of medicine, as far as I have been enabled to learn, from the investigations I have made; and as corroborated by the testimony of others. — *Dub. Jour.*

Extirpation of the Uterus. — Mary Ann Morris, æt. 28, was admitted to the Royal Infirmary, Manchester, Dec. 5th, 1839. About five years ago she was delivered of a female child, and according to her representation the placenta was hastily brought away, so that the uterus was probably inverted. It does not appear that she had been previously subject to a prolapus.

She complained of a long-continued discharge from the vagina, (sometimes bloody and attended with a bearing down,) which had materially affected her constitution; the countenance was pale and exsanguineous; the whole frame debilitated. She had also occasional pains in the loins and thighs, and rheumatic pains in different parts. She had used the preparations of iron and bitters, acetate of lead, &c., without relief. On examination, the uterus was found inverted: it was pyriform in shape, and presented at the fundus a smooth globular surface, which bled profusely on the slightest touch. At the neck it was surrounded by the reflexion of the mucous membrane, which formed a little band embracing the cervix uteri.

I passed, says Mr. Harrison, the reporter, a ligature round the uterus, which was forced down by the patient while in a sitting position. The instrument which I used was a simple rod of iron, pierced at the extremity with a small round aperture. The ligature, which consisted of three pieces of the ordinary kind twisted together, was passed round the uterus a little below the neck, the two extremities being drawn through the aperture at the end of the instrument, and fastened to some small projections at the handle, which was secured to the thigh by a bandage fastened round the waist. The operation was followed by pain, tenderness in abdomen and back, dysuria, &c., and by a good deal of constitutional disturbance, yet by the use of anodynes, leeches, calomel, and opium, &c., the event was favourable. The uterus became detached on the 19th day, and the patient soon regained her health. — *Med. Gaz.*

Lead Colic—New means of Diagnosis. — Dr. Burton, of St. Thomas Hospital, London, states that a characteristic symptom of the influence of lead on the system is a deep blue, or leaden colour of the gums, observable just where the gum joins the neck of the teeth. He had had thirty cases in the house during the last six years, and it had been observed in all. — *Lancet.*

Actæa Racemosa. — Dr. Young, of Chester, Pa., has used the actæa with the greatest benefit in the treatment of Chorea. He recommends the exhibition of the powder in tea-spoonful doses three times a day, in children from twelve to fourteen years of age.*Am. Journ. M. Sc.*

Poisoning with Arsenic. — The following case, which lately occurred in France, in which the most distinguished professors of legal medicine in Paris were called upon in evidence, is one of great interest, especially as illustrating the improved method of examining bodies supposed to have been poisoned by arsenic. Louis Mercier, the father of several children, one of whom was of weak intellect, espoused a second wife, named Mary Chambellaud. The latter was very frequently heard to express her disgust at being compelled to live under the same roof with the idiot boy, whose habits were extremely unclean and revolting. On one occasion, the father was heard to say, in reply to some recriminations on the part of his wife, "never mind, it will soon be over." On the 13th of December last, Mercier purchased an ounce of arsenic at an apothecary's shop. On the 15th, his son, Nicholas, was seized with vomiting; this continued for several days, and the boy expired on the 22d. No medical aid was demanded; the child was attended by his father and step mother alone; none of the matters vomited up were recovered.

At the trial of the father, which took place in November last, the following documents were read by the Attorney General:

1. A report from the medical men who had been ordered to exhume the body fourteen days after death. They discovered acute inflammation with ulceration of the intestinal canal, and concluded that the deceased, Nicholas Mercier, had been destroyed by some irritant poison.

2. A report from M. M. Séne, Pagen and Fleurat, chemists, who had carefully examined the intestinal canal of Mercier, without finding the least trace of any poisonous substance.

3. A medico-legal consultation from M. M. Orfila, Devergie, and Ollivier, showing that the experiments of M. M. Séne, &c. had not been pushed far enough, and requesting that the body might be sent to Paris for further examination.

4. A report from M. M. Orfila, &c. showing that a certain quantity of arsenic had been extracted from the liver and members of Nicholas Mercier.

5. Two reports from M. M. Orfila, Devergie, and Leseur; and from M. M. Pagen, Séne, and Fleurat, showing that no arsenic was contained in the ground where the body of young Mercier had been buried.

After the reading of these reports, M. Orfila declared his opinion that Nicholas Mercer had died from poison, and in support of his opinion, stated at length the following reasons:

1. Up to January last, chemists were in the habit of merely examining the matters vomited, and those found in the intestines and intestinal canal itself. If they discovered the presence of arsenic, and if the morbid appearances, &c. corresponded, then they concluded the case to be one of poisoning. On the contrary, if they did not find arsenic in the intestinal canal, they simply stated that no poisonous substance was dis-

covered; and, sometimes, when the symptoms and morbid appearances were not in accordance with the idea of poisoning, they spoke very doubtingly of its occurrence or possibility. By the publication of M. Orfila's memoir on arsenic, it has been shown that arsenic may be found in the organic tissues, particularly in the liver, of persons poisoned with that metal, even when no trace of it can be discovered in the digestive canal. M. Orfila's first experiments were confined to dogs, but he had seen opportunities of confirming his opinion by experiments on the human subject. Considerable quantities were found in the flesh and viscera of Soufflard, who poisoned himself with arsenic, when on his trial for murder. M. Lorrin poisoned himself with arsenic, and numerous traces of it were found in his liver. Hence it is well established, that in case of poisoning with arsenic, the metal is absorbed, and may be discovered in the tissues; while, by the same processes, not a particle of arsenic can be discovered in the same tissues, if the person has not taken any arsenical preparation.

2. M. Orfila does not admit with those physicians who examined the body of Mercier, that the symptoms and morbid appearances taken together are sufficient to prove that the deceased met with his death from poison; for it is a rule in medical jurisprudence, that such a conclusion should never be drawn unless the poison has been actually demonstrated by chemical means.

3. The experiments performed by M. M. Orfila, Devergie, &c. demonstrated that the body of Mercier contained arsenic in addition to that which is naturally found in the human body. A certain quantity of the metal was obtained from the liver, limbs, and putrid fluid of the barrel in which the body was forwarded to Paris. It might, perhaps, be objected, that as the body of the deceased had laid for four months in the ground, some arsenic might have been generated by decomposition; to clear up this point, two other bodies were exhumed and analyzed, but not a trace of arsenic was discovered in them.

4. M. Orfila answered by anticipation objections which might be offered to the preceding observations: 1. The tests might have contained arsenic; they neither did not, could they have contained a grain of this metal. 2. If the body contain naturally some arsenic, how can it be decided that that found in the body of Mercier, was not a part of the natural arsenic? In the normal state, when the liver is treated with nitric acid, it never furnishes arsenic, but the liver of Mercier did. 3. But, perhaps the earth of the burying ground contained some arsenic, which may have passed into the body by imbibition. At four different times, several pounds of the earth which surrounded the body were analyzed,

and on one occasion only was a very slight trace of arsenic discovered, and even here it was necessary to employ boiling sulphuric acid. Besides, bodies buried in grave-yards which contain a much greater quantity of arsenic than that of Villery-sur-Tisle, do not contain arsenic.

From these considerations, M. Orfila concluded that Nicholas Mercier died from poisoning with arsenic.

M. Devergie having explained his reasons in a clear manner, expressed a similar opinion.

The father of Nicholas Mercier was therefore found guilty of having poisoned his son. — *Lancet.*

New modes of Topical Application in Chronic Laryngitis. — M. M. Trousseau and Belloc, in their recent work on Laryngeal Phthisis, recommend the following new mode of treating this affection. They regard *liquids* as more easy of application than inspirations of vapour, and without the risk of injuring the trachea and bronchi. They use those that are irritating, and others that are simply astringent. The former are solutions of nitrate of silver, corrosive sublimate, sulphate of copper, and nitrate of mercury. But they decidedly prefer the first, on account of its rapid action, its harmlessness, and its efficacy. The following is their mode of using it: —

We use it of various strength; sometimes we put a drachm of the nitrate to ten drachms of water, sometimes half this strength.

Various methods have been devised to apply caustic to the larynx; when we wish to operate upon the upper part of the larynx, and the epiglottis, we take a piece of paper firmly rolled together, and bent at its extremity, which is to be soaked in the solution, so as to take up at least a drop; the mouth is to be opened and the tongue depressed with the handle of a crooked spoon. The porte caustic is then introduced, and when its extremity has passed the epiglottis, it is to be depressed, which buries it in the upper part of the larynx — a piece of whalebone answers the same indication, and is more convenient, because less flexible than the rolled paper. When we wish to cauterise the pharynx, the base of the tongue, and the larynx at the same time, we take a whalebone, at least a line and a half thick, that it may not bend readily; this is heated an inch or more from one end, and when sufficiently softened, we curve it at an angle of 45 degrees. To this end we fasten a spherical piece of sponge, six lines in diameter; the sponge is to be moistened with a solution of nitrate of silver, the mouth opened, and the tongue depressed as before. When the isthmus of the gullet is passed, there occurs an effort of deglutition, which elevates the larynx, and we seize the opportunity to draw forward the sponge, which had been at the entrance of the œsophagus. By this manœuvre we get at the glottis, and then it is easy to express the solution into the larynx; the cough which now occurs favours the introduction of the caustic. The operation ofen excites vomiting. This plan, although not painful, is very disagreeable, and many patients refuse to submit a second time. We then use the following, which is equally efficacious and less unpleasant: —

It consists of a small silver syringe, like Anel's, with a tube five inches long, and curved at the end. The opening of the tube should be at least a quarter of a line in diameter. The syringe is filled to one-fourth of its capacity, and then the piston is raised to its full extent, so that there shall be one quarter solution and three quarters of air in the instrument. This is indispensable, that when we depress the piston rapidly, we may produce a fine shower and not a full jet. The patient is placed as before; and when the end of the tube has passed the epiglottis, the liquid is pushed out of the instrument, and is simultaneously introduced into the larynx and upper part of the œsophagus. The patient instantly experiences a convulsive cough and regurgitation, which enable him to throw off all the solution which is uncombined with the tissues. We then make him drink a few mouthfuls of hydrochloric lemonade, or simple salt water, to decompose any of the solution that may have remained in the œsophagus. We shall furnish some cases to show the utility of cauterising the larynx in the first stage of laryngeal phthisis.

It cannot be denied that the introduction of liquids into the larynx is attended with difficulty; the operation is unpleasant for the patient, and the sudden constriction of the glottis always prevents the medicine from penetrating far. We want, then, some method of applying therapeutic agents to the whole of the larynx, and even to the upper part of the trachea.

For this purpose our authors recommend the insufflation of *medicated powders* by means of a glass tube two lines in diameter, and eight or ten inches long.

Three or four grains of the powder are to be put into one end of the tube, the other extremity is to be placed as deeply in the mouth as possible.

After emptying his lungs by a strong expiration, the patient closes his lips upon the tube, and then by a quick effort of the diaphragm, takes breath rapidly. These inspirations are repeated, more or less frequently every day, according to the state of the larynx, the nature of the powder, and the manner in which it is borne. We have in this manner introduced pulverulent collyria into the larynx as easily as into the eyes.

Sugar and sub-nitrate of bismuth may be used pure; the calomel mixed with 12 times its weight of sugar, red precipitate, sulphates of zinc and copper, with 36 times their weight; alum with twice, acetate of lead with 7 times its weight; and the nitrate of silver with 72, 36, and 24 times its weight of sugar. These are the proportions we generally adopt, but they may be varied *ad infinitum*, and must be regulated by the state of the larynx and the susceptibility of the patients.

The apothecary should be directed to prepare these powders on a porphyry slab, otherwise small crystalline asperities remain which act as irritants.

The Cephalic Ganglion, or Pituitary Gland.—Its connection with the Nervous System of Organic Life. By M. Bazin.

M. Bazin's dissections have led him to believe, that the pituitary gland is a true nervous ganglion. If other anatomists should come to the same results, the mystery so long hanging over this supposed gland, will be cleared up.

M. Bazin has observed that the filaments by which the cephalic ganglion, or pituitary gland, is connected with the organic nervous system, arise from the anterior and posterior aspects of the ganglion; from which they pass laterally, to proceed immediately to the internal carotid artery, around which they wind, giving filaments to the carotid plexus. Several filaments thus anastomose with the net formed by the cavernous plexus.

The filaments arising from the anterior aspects of the cephalic ganglion are the largest; they form a fasciculus two millimeters wide, which is produced by the union of the two principal trunks. Arrived at the internal carotid, in the level of the concavity of the curve which it makes to go to the brain, they form a small gangliform plexus.

A filament given off by the anterior trunk, turns round the anterior and external aspect of the internal carotid, and divides into two filaments, each of which passes to one of the opposite extremities of the carotidean or cavernous ganglion. This ganglion furnishes several filaments, which pass to the third pair, and go to the opthalmic ganglion. Behind, the cavernous ganglion sends several filaments to another ganglion, situated between the external surface of the carotid and the first branch of the trifacial. This last ganglion gives several filaments to the outer surface of the carotid; others go to unite with a plexus, situate between the third pair and the opthalmic branch of the fifth; and this plexus gives two filaments to the sixth pair. The others go backwards to what appears to be a true ganglion, situated in the internal surface of this first branch of the trifacial. The ganglionic plexus, resulting from the union of the nerves coming off anteriorly from the cephalic ganglion, sends two moderate sized filaments over the concavity of the last curve of the internal carotid, which are connected on the one hand with the *nervi molles* of the cavernous plexus, and on the other with the large filament which the superior cervical ganglion sends under the lower and outer surface of the internal carotid; other filaments proceeding from the anterior surface of the cephalic ganglion, and others still, which arise on its posterior aspect, embrace and twine round the carotid, and are also continued to the filament we have just pointed out. — *Med. Gaz. from Comptes Rend.*

New Procees for the separation of Arsenic in Organic Mixtures. By L. Malle, M. D.

Numerous experiments having convinced M. Malle, that the ordinary processes, (those of Hahneman, Rose, Fischer, Orfila, Rapp, and Taufflieb,) resorted to for the detection of arsenious acid in animal matters, are more or less ineffectual, when the quantity of poison does not exceed $\frac{1}{10}$ of a grain, he was led to investigate the subject closely, and now proposes the following method, as superior to those hitherto employed. The suspected matters, whatever be their nature, are to be placed in a porcelain capsule; any vegetable poison they may contain having been previously dissolved in alcohol and ether; a solution of hydro-sulphate of ammonia is then poured on them, in order to transform into sulphurets the arsenic acid, and any other metalic preparations capable of undergoing such transformation, which may be chanced to be contained in the mixture. The liquid is then slowly evaporated, and the residue treated with alcohol saturated with ammoniacal gas, in order to precipitate organic substances, and dissolve the sulphuret of arsenic. The contents of the capsule are next filtered, whereby a fluid containing alcohol, ammonia, and the sulphuret in a state of solution, is obtained. The whole is next placed in a retort, communicating with a mattrass, and then heated in a water-bath, so as to distil over the alcohol and volatilize the ammonia. The residue is then treated with nitric and a little hydrochloric acid, in order to destroy organic substances, and to convert the sulphuret into arsenic and sulphuric acid. Once this is effected, nothing remains to be done but to separate the two acids, by adding some ammonia and ammoniacal sulphate of magnesia to the liquid, which precipitates the arsenic acid in the form of an ammoniacal arsenite of magnesia. This precipitate is collected on filtering paper, and after having been carefully washed, is reduced by exposure to a current of hydrogen gas in a small tube, drawn to a fine point, as recommended first by Berzelius.

By this process, M. Malle was enabled to obtain a metallic ring from half a pound of alimentary substances, to which five milligramms of arsenious acid had been added. In order to remove all doubts of the nature of the metallic substance obtained, it was placed in a small vessel full of dry oxygen, and thus converted into arsenious acid, which again was precipitated with hydro-sulphuric acid, in the form of a sulphuret, soluble in ammonia. — *Med Gaz. from L'Experience.*

Efficacy of Tartar Emetic in the acute forms of Bright's Disease, attended with Albuminous Urine.

Dr. Barlow recommends (Guy's Hosp. Rep.) in decided terms the use of the tartar emetic, in the acute anasarca following scarlatina. Dr. B. gives it in combination with local bleeding and hydrogogue cathartics, in the proportion of from ¼ to ½ a grain every four to six hours. He regards this remedy as equally applicable to the acute form of the Bright's disease, when arising from other causes, as exposure to cold, &c.

A Tasteless form of Ipecac. — When it is desirable to administer Ipecac to refractory children, or to persons to whom the wine of Ipecac is particularly odious, the following form will be found to answer: —

℞ Rad. Ipecac contus, ʒss.
Aq. Bullient, q. s. ut. f. colat. ℥iss.
Adde Syr. Limon, ʒss.
Sum. partem 12m. . 3tiis. horis.

(*To the Editors of the New-York Journal of Medicine and Surgery.*)

Gentlemen: — At your request, I have drawn up a short outline of the plan I have followed for some years in preparing and putting up wet anatomical preparations. Should you, on perusal, consider it of sufficient interest to the profession, you are at liberty to publish it.

I remain your obedient servant,
Gustavus A. Sabine.

The following method of preserving natural and morbid specimens is generally adopted in the anatomical museums in London, being preferred from its entirely preventing evaporation, discolouration of the fluid, and sediment.

The part to be preserved is carefully removed from the body, dissected from all fatty and superfluous matter, and afterwards washed in rain-water; where the preparation will bear it, slight pressure may be used to remove coagula, blood, &c. The preparation should then be macerated in rain-water for a few days. The time necessary for this process will depend principally on the size and structure of the part, also on the temperature of the weather; in winter requiring a much longer time than in summer. The water must be changed as often as it becomes discoloured.

The preparation being removed, and the water drained from it, it should, if necessary, be distended with horse-hair, or some other substance, and suspended in the position in which it is intended to be shown, by human hair, horse-hair, catgut, or silk, to a small piece of wood which extends across the mouth of the jar. The wood used for this purpose, must be free from resinous, gummy, and colouring matter.

"The fluid generally used, is equal parts of alcohol, 815° and rain-water, previously mixed and filtered; but where the preparation is large, it is necessary to allow it to stand for its bulk of water; consequently, in putting up a specimen which would occupy a space equal to four ounces of water, in a jar which will contain a quart of fluid, use alcohol ℥xvj. water ℥xij.; should the same preparation afterwards require the fluid to be changed, use equal parts of alcohol and water, as the preparation is already saturated with spirit of that strength.

"All preparations of the brain, or nerves, should be first hardened in alcohol, or in a solution of the oxymuriate of mercury in alcohol, and afterwards put up in about two-thirds alcohol and one-third water."

The jar is to be filled with fluid, as above described, and closed with a piece of mica the thickness of a shilling, cut the exact size to fit closely the outer edge of the rim of the mouth of the jar, and kept down to the glass rim by a piece of bladder, previously macerated for three or four days, and tightly bound round the neck of the jar with wet twine.

In this state the preparation may be allowed to remain from four to six months; at the end of this time, to be taken out and placed on a very clean piece of plate-glass, or white marble slab. If a distended preparation, the horse-hair or other substance must be removed, and further dissection, if necessary, made afterwards; carefully rinsed in proof spirits, and suspended in a clean glass jar, filled either with fresh spirits of exactly the same strength as that from which it has been previously removed; or the old spirits may be used mixed with a small quantity of finely powdered animal carbon, and filtered through bibulous paper. Let it now be covered, as before directed, with the mica and bladder; and if, after two or three months, the spirits are uncoloured and without sediment, then the bladder must be covered with a thin coat of India rubber dissolved in spirits of turpentine; a piece of sheet-lead may be placed on the India rubber when dry, and covered with bladder: lastly, this is to be varnished with black copal varnish, or some other coloured varnish to suit the taste of the curator.

4 Leroy Place, May 30th, 1840.

To the Editors of the New-York Journal of Medicine and Surgery.

Gentlemen,

In looking over the account of a case of subclavian aneurysm, contained in my Hospital Report, published in the last number of your Journal, I regret to find that I have accidentally omitted to state, that the explorative operation on the arteria innominata was performed by Dr. R. K. Hoffman. As

I am desirous of giving credit where it is due, I hope that you will oblige me by inserting this note in the next number of your Journal.

Respectfully yours,

Alfred C. Post.

Living Snake in a Horse's Eye. — We have seen this singular exhibition, and can testify to its truth as a remarkable phenomenon. The snake was discovered during the month of February last, it being then about half an inch long. It now is about three inches in length, of a white, thread-like appearance, with a larger extremity, which is probably the head. It occupies the anterior chamber of the eye, and is constantly in motion, revolving upon itself, and twisting into every possible shape. The eye itself is not materially affected; there is no appearance of present or past inflammation. The lower portion of the aqueous humour is a little cloudy; and when this is disturbed by the motions of the snake, the whole becomes turbid for a moment. This deposit is regarded as excrementitious.

We acknowledge the receipt, from the author, of a Treatise on the Diseases of the Eye and its appendages. By Richard Middlemore, M. R. C. S., Surgeon to the Birmingham Eye Infirmary, in 2 vols. 8vo., 1835. Also an Introductory Lecture by the same, delivered at the Birmingham Royal School of Medicine and Surgery, 1839. Also, the Prospectus of a Journal of Opthalmology.

A Treatise on Medical Etiquette, by Mr. A. Banks, Surgeon, London; from the author. — A work abounding in good advice, but of very little use, like all advice of the same kind.

An Essay on the means of improving Medical Education, and elevating the Medical Character. By Andrew Boardman, M. D. Presented to the Faculty of Geneva College, January, 1840. From the author. This Essay abounds in talent, but it is extremely *radical* in its opinions. While we see clearly the imperfections of our present system of medical education, yet we do not know the remedy. Dr. B., we think, has not found it.

Transactions of the Medical Society of the State of New-York, Vol. III. Part III. From the Society. This volume contains Statistics of the Medical Colleges of the United States; by T. Romeyn Beck. Annual Address on Improvements in Medicine; by Laurens Hull, M. D. Report on Medical Education. Prize Dissertation on Diseases of the Spinal Column; by Nathan S. Davis, M. D. Address before the Chenango County Medical Society; by Dr. Wm. D. Purple. Case of Sudden Death from rupture of the spermatic vein; by James McNaughten, M. D. — With other interesting papers, which we hope to notice more particularly in our next number.

An Introductory Address before the Students and Trustees of the Vermont Academy of Medicine, Castleton; by Horace Green, A. M. M. D., of New-York; from the author. This Address contains a brief outline of some of the more important epochs in Medical History, by our fellow-practitioner, Dr. Green, at the rëopening of the above Institution, which had remained closed since 1837. We notice by the accompanying Catalogue, that the number of Students during the past session was 57.

Catalogue of the Students, &c. of the Vermont Medical College at Woodstock. From Professor Watts. The number of Students attending Lectures at this Institution, the present year, was 80.

A Lecture on the subject of Phrenology, not opposed to the Principles of Religion, nor the Precepts of Christianity. By Wm. Ingalls, M. D. Also, An Essay on Scarlatina, from the same.

Dr. Stewart's Translation of Billard. We regret to observe that some of the English Medical Journals, while they express themselves most favourably of the above work, yet by some mistake speak of it as the work of one of their own countrymen. This is unjust to Dr. Stewart, who we hope feels too proud of having added something to the medical reputation of this country, to be willing to lose any portion of it.

Bouillaud on Diseases of the Heart. We are happy to learn that this excellent work is now in the course of translation by Dr. E. S. Dubarry, U. S. N. and will soon be published.

Paris. The *concours* for the Chair of Internal Pathology, rendered vacant by the transfer of M. Andral to that of General Pathology, has terminated, after a long session, in the election of M. Piorry, well known as the inventor of mediate percussion.

The French Journals also announce the death of M. Biett, the physician to the Hospital St Louis. The death of this distinguished physician, will be lamented by that numerous class of American students, who have attended his clinical instructions on diseases of the skin, of late years, and who recollect the extent and accuracy of his practical knowledge, and his urbane manners.

M. Hippolite Cloquet, the well known anatomist, is also dead.

Cupping, &c. We have been requested to call the attention of the profession of this city, to the card of Mr. W. Cohen, Cupper, Leecher, &c., No. 59 Franklin-street. From the testimonials we have seen, we are satisfied that he excels in the art.

Dr. Chapin's Patent Uterine Supporters. By referring to the advertising sheet, it will be seen that this gentleman has invented a variety of instruments for the removal of prolapsus uteri, hernia, &c. We have taken pains to inquire of the best authorities, as to the merits of Dr. C's apparatus, and find them much approved by the profession. His office is No. 90 Nassau-street, near Fulton.

THE

NEW-YORK QUARTERLY JOURNAL

OF

MEDICINE AND SURGERY.

FOR OCTOBER, 1840.

Art. I. *On Syphilis in Infants.* By H. D. Bulkley, M. D. Lecturer on Diseases of the Skin.

It is an unfortunate comment on the progress of medical science, that a branch which has been the subject of so much research, and of such extended observation as syphilis, is still shrouded in such a degree of obscurity, and still a subject of such difference, and indeed contrariety of opinion. If this remark be true with regard to the disease in adults, it is still more so with reference to its symptoms, diagnosis, mode of communication, and laws of transmission in infants, a branch of the subject which yields to no other either in interest or importance in its bearings on morals or on science, and which, while it presents several striking points peculiar to itself, opens at the same time a field for observation which has been too much neglected. Some apology for the prevailing want of definite and practical information on the subject, which is generally acknowledged to exist, may perhaps be found in the inherent difficulties of the subject, particularly in private practice, some of them arising from the impossibility of any direct testimony on the part of the patient, others, and still more formidable ones, from the great temptation which so often exists, and which is unfortunately too seldom resisted, to divert the practitioner from a knowledge of the true cause and nature of the evil; and others again connected with the many circumstances which may modify and disguise the disease in its appearance and progress in infants and young children.

The infection of children was noticed by some of the earlier authors who described syphilitic diseases; but the particular forms assumed by it in this class of patients were not accurately defined until towards the close of the last century. About that period, a large institution was founded in Paris for their special treatment; and it is from this and other institutions of a kindred character, there and elsewhere, that we have derived the greater part of our present knowledge respecting them. The information from these sources has been handed down and copied from one author to another, always very much abridged, and not unfrequently distorted by theoretical views, and is scattered through books with so much looseness and want of system, in most instances, as to afford but little aid to one in search of accurate ideas as to their diagnosis or treatment; and, so far as I can learn, with the addition of but a scanty amount of original observation, or real practical knowledge.

Except in such institutions, the study of this branch of syphilis has been very much confined to those who have cultivated one or both of the two specialities of syphilis in general and cutaneous diseases; and even from these, with very few exceptions, the information to be derived is extremely meagre and unsatisfactory; while the vagueness of their descriptions, and the too frequent discrepancy among them, tend rather to embarrass than to aid in the search for the symptoms necessary to form a correct diagnosis, and for the indications to enable one to enter at once upon an approved and rational mode of treatment. Some describe one or more of its varieties, and others one or more different forms, giving different names to the elementary lesions, and thus presenting but a partial view of an extensive and important subject: a remark which will apply to those who have even contributed largely to an accurate and extensive knowledge of the other parts of the subject of which they have treated; while no one, so far as I can learn, has presented that connected and summary view which the importance of the subject certainly warrants. Under these circumstances, I have ventured to present to the profession results drawn from my own observation of cases, at the same time that I have endeavoured to present the different points of the subject of most intense and practical value, as derived from different sources of information to which I could gain access.

Within a period a little exceeding four years, there have come within my observation 30 cases of syphilitic disease in infants and young children; and in addition to these, two more cases of the communication of the infection by infants to adults, making 32 cases. Of these, 23 cases were under my immediate care, and the particulars of them noted at the time; the remainder I saw either by invitation or in consultation, and have been obligingly furnished with the notes of all but three of them, (of which no record was kept,) and also with the notes of three other cases which I did not see; which, added to the 32 cases, make an aggregate of 35 cases of this disease, to which I am enabled to refer in illustration of the different points connected with the subject.

The *parts and tissues affected* by syphilis are the same in infants and children as in adults, viz. the *mucous membranes* at their orifices or terminations, the *skin*, the *absorbent system*, the *sub-cutaneous cellular tissue*, and the *fibrous* and *osseous systems.* The following list comprises all the different lesions which I have either seen or found recorded.

I. Those affecting the *mucous membranes*, as

1. Discharges from different parts, as the conjunctiva, the ear, the schneiderian membrane, the vagina, the urethra, and the anus;
2. Primary chancrous sores;
3. Flat tubercles;
4. Vegetations;
5. Congestion of schneiderian membrane without discharge.

II. Those affecting the *skin*, (which is usually the part first showing marks of infection in hereditary syphilis,) under the forms of

1. Pustules, usually of the physacious kind, sometimes of the varioloid variety;
2. Flat tubercles;

3. Ulcers of different kinds, following pustules, excoriations, &c. and sometimes commencing primarily;

4. Excrescences of different kinds;

5. Brownish or fawn coloured, or, as they are generally called, *copper coloured* spots, sometimes covered with thin scales, and at other times not;

6. Spots or patches of a similar colour, of variable size and shape, on the forehead, over the eyebrows, &c.;

7. Small spots resembling those of purpura, of which I have seen but one case reported.

III. Those affecting the *absorbent system*, in the form of

1. Buboes, which are exceedingly rare, and of which Bertin gives but one unequivocal case;

2. Swellings of the lymphatic glands of the neck, &c. which are much more frequent, and were called buboes by the older writers.

IV. Affections of the *sub-cutaneous cellular tissue*, presenting themselves under the form of

1. Swellings, more or less indolent in their nature, on the head, neck, shoulders, nates, and groins; in one case, on the inner malleolus; sometimes terminating by resolution; sometimes discharging a serous fluid, more or less bloody, and sometimes producing caries of the bone when on the head,—swellings which are always dangerous, and frequently fatal. (Bertin.)

2. Œdematous swellings of the legs and feet, which, Bertin says, are not unfrequently the consequence of suppressed discharge from the eyes.

V. Affections of the *fibrous* and *osseous systems:*

1. Swelling of the joints;

2. Periostitis, (in one case by Bertin on the forearm of a child, 35 days old;)

3. Exostosis, (case by Bertin;)

4. Caries, (this is very rare.)

Of the discharges from *mucous membranes* arising from venereal infection, the first in order, both in frequency and severity, is that from the *conjunctiva*, though opinions as to its frequency are widely at variance. Bertin says that the syphilitic opthalmia of new-born infants is almost always primary, and the consequence of infection received during delivery; and that, in more than 900 cases, it occurred in nearly 300. Colles, on the other hand, never saw a case of purulent opthalmia with truly syphilitic symptoms. The frequent origin of discharges from the eyes of new-born infants of a muco-purulent or purulent character from cold, exposure to excessive light, and also from leucorrhœal and other discharges of a nature entirely distinct from venereal, and at the same time that there is perfect freedom from all syphilitic taint, particularly in scrofulous children, afford good reason to doubt whether Bertin has not very much overrated the frequency of opthalmia from an infected source. This discharge not only occurs without being accompanied by the least symptom of a suspicious nature, but frequently, indeed in perhaps a majority of cases, yields to the mildest treatment, and often to ablution alone. Its syphilitic origin is, however, sometimes beyond a question; and it may exist with different degrees of severity, from a red, thickened, and œdematous state of the eyelids, and a discharge scarcely puriform, to such a degree of swelling of the lids that it is very difficult, and even impossible to separate them, with sometimes a bloody discharge from the inflamed conjunctiva, followed by a yellow or yellowish green matter, which sometimes becomes so adhesive that the lids can only be separated with difficulty. Sometimes it even produces disorganization of the cornea, giving rise to leucomatous spots, staphyloma, and consequent blindness.

Syphilitic *coryza* is next in frequency to opthalmia, and is accompanied by snuffling and difficulty in breathing, in proportion to the severity of the inflammation. The discharge is at first thin, and afterwards more consistent; is sometimes easily discharged, and at other times, dries, and thus obstructs the breathing; and there is sometimes blood mixed with the discharge. Caries of the spongy and nasal bones occurs in some cases, though but very rarely.

Discharges from the *vagina* have been by some regarded as always mucous, and by others as almost always venereal in their origin. They are of not unfrequent occurrence in strumous children during the period of first dentition, without the least suspicion of such an origin, though Bertin thinks that they are more apt to be venereal than has been supposed, and that they are sometimes accompanied with other marks of syphilis. He says that these discharges sometimes followed a venereal opthalmia suddenly suppressed, and *vice versa.*

Discharge from the *urethra* is of so rare occurrence that Bertin saw but one case in nine years, and his predecessors in the hospital never observed a single case.

The affection of the *osseous system* is less common in infants than in adults, because, being among the latest symptoms in the order of development, the little patients usually either die or are cured before they appear. They are also generally not obstinate, because the developement of the osseous structure at that period is imperfect, and its density comparatively small.

Besides this list of lesions which may be considered as *local* and confined to particular parts of the body, are those of a *general* nature, forming a second class of symptoms, much less certain in their nature, because embracing morbid alterations common to this and to other diseases; and also because sometimes occurring in children born of healthy parents, and not always appearing in those of contaminated origin. These are,

1. A peculiar dusky or earthy hue of the whole skin;

2. A general state of cachexia, marked by a more or less withered and wrinkled appearance of the skin, which has been compared to parchment slightly moistened, with wasting and emaciation, the flesh hanging in folds on the limbs;

3. A peculiar expression of countenance like that of *old age in miniature*, as it has been happily called, and to the children presenting which the significant appellation of "*semi-cocti,*" (or half-cooked,) was given by one of the earliest writers on syphilis — an expression of countenance which seems to differ from that of ordinary cachexia dependent on other causes, in not conveying the idea of suffering on the part of the patient;

4. A peculiar shrill tone of the voice, and sometimes hoarseness;

5. An erythematous or erysipelatous redness of the whole surface, or of particular parts;

6. A general puffiness of the sub-cutaneous cellular tissue, and also swelling of the hairy scalp;

7. A maceration, and sometimes a general or partial separation of the cuticle, and perhaps destruction of a part of it;

8. The absence of the hair, or of some of the nails, or the incomplete formation of the latter;

9. Flaccidity, and sometimes temporary paralysis, of the upper and lower extremities;

10. Desquamation of the cuticle, particularly in the hands and feet;

11. The group of symptoms called by Ricord "*tertiary*," consisting of alterations without any specific character, and which he says can usually be referred to scrofula.

The preceding symptoms, as before remarked, may all occur, to a greater or less extent, in children not contaminated by the syphilitic virus, and do not always exhibit themselves even in children of parents known to be infected. When they do occur, however, either the whole together, or, what is more common, only a part, they should always arrest the attention of the practitioner, and lead him to watch the case narrowly, especially when suspicion of contamination rests on one or both parents.

As sequelæ to some of the symptoms enumerated in the first class, may be mentioned the occasional concretion of the matter, when the pustules are numerous on the forehead, into a dark coloured scab, resembling confluent smallpox; also a coryza, the discharge of which concreting, stops up the nostrils, while ulcers in the mouth and fauces obstruct deglutition, — the combination of these symptoms soon destroys life.

The following are the *symptoms*, one or more of which were presented by the cases which have come under my observation: of the *first* class,

1. Inflammation of the conjunctiva, with purulent discharge;

2. Congestion of the mucous membrane of the nostrils, obstructing respiration, particularly during the act of sucking, and giving rise to a peculiar and almost pathognomonic kind of snuffling; in one case, attended with discharge of blood;

3. Superficial ulcerations of a grayish colour within the mouth, and especially at the angles of the lips;

4. Phlyzacious pustules;

5. Flat tubercles, most commonly about the anus; in one

case in the folds of the front part of the neck, and in another case, on the upper lip;

6. Ulcers of different kinds, and on different parts of the body; on the chin and cheeks, superficial, of irregular shape, with very slight elevation of edges, and covered more or less with a tenacious, grayish discharge; about the nates and thighs, nearly or quite circular, from the size of a five cent piece to that of a shilling, more or less inflamed, and with indurated and elevated edges; in one case on the head, perfectly circular, with deep cut sides and indurated edges, the size of a shilling piece;
7. Irregular patches of brownish or fawn-coloured discolouration on the forehead, over the eyebrows, &c.;
8. Spots of the same colour, almost perfectly circular, of a size varying from that of a split pea to that of a five cent piece, and generally scattered more or less thickly over the limbs, with few and often none on the body;
9. Peculiar light coloured spots presented by the disease on the skin of the negro and mulatto.

Of the 2d class,

1. The peculiar earthy colour of the whole integuments;
2. Cachexia, with great emaciation, and a withered and wrinkled appearance of the skin;
3. Peculiar expression of premature old age;
4. Peculiar alteration of the voice, generally hoarseness;
5. Erythematous redness of certain parts of the skin, particularly of the nates and upper part of thighs;
6. General puffiness of the sub-cutaneous cellular tissue;
7. Desquamation of the cuticle, particularly on the hands and feet;
8. Paralysis of the upper extremities;
9. Onyxis of the nails of the hand.

The occurrence of the disease in mulattoes and blacks presents us with some modifications in its cutaneous affections which I have never before seen described, and of which I have seen two

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In one case since the above was written, and eruption of dull or livid red, flattened papulæ was seen, the largest of the size of a split pea, almost entirely covering the body of an infant soon after birth, the body and limbs of whose mother were completely covered by an eruption entirely analogous, for some weeks before its birth.

cases. For the inspection of the first of these, I am indebted to my friend Dr. Macready, from whose notes of the case I have been obligingly permitted to copy a description of the appearances presented. "The patient was a coloured child, the daughter of a black man and a mulatto woman, and was four months old; its father was under treatment for the venereal disease at the time of his marriage. The mother had never had primary symptoms, and the child was born at the full time. The eruption first appeared at six weeks of age, preceded by restlessness and fever; it commenced upon the knees, and extended gradually over the arms and legs, and lastly on the body. Diarrhœa, with great restlessness, supervened, and the child was no longer nursed. The skin of the knees and legs presented numerous dusky coloured spots from one and a half to two lines in diameter, surrounded by whitish circles of the same diameter, the colour of the white being lighter, and that of the dark deeper, than the natural hue of the skin. The labia were much swollen, and, together with the nates and upper parts of the thighs, were kept constantly moist, presenting numerous superficial ulcerations of a crescentic form, which presented white surfaces, surrounded by a dusky areola, and which became covered with innumerable points of blood, when the limbs were extended. In some places, a small round whitish ulcer was surrounded by a complete circular areola; and near the umbilicus, a dusky spot, similar to those on the knees, was surrounded by a whitish circle, part of which was composed of a whitish excoriation, and the remainder was sound skin, which seemed to be deprived of its rete mucosum. The lower part of the face and neck was covered by ulcerations similar to those on the nates. The root of the tongue was furred, while near the tip, enlarged and reddish papillæ had formed several circular enclosures, three or four lines in diameter, similar to the rest of the tongue. The child snuffled very much in breathing. It was ordered calomel in doses of half a grain, with one grain of Dover's powder, night and morning. Four days after, considerable improvement had taken place. Some of the light coloured spots had appeared on the abdomen, which looked as if the colouring matter merely had been absorbed; its bowels were loose; it nursed well. The child died on the evening of the same day in consequence of long continued exposure to cold."

In the other case, which I was called to see by a medical friend, the child, which was very low when he had seen it for the first time the preceding day, had died before we reached the house. The whitish appearance of the spots and ulcers, however, was so striking as to present a strong resemblance in its general character to the case just detailed. No particulars of its history, or of that of its parents was obtained.

I have seen one other case in a mulatto, a child 12 months old, which, however, was seen but once, and respecting the history of which I could learn nothing satisfactory. This child had two well-marked venereal ulcers, one covered with a scab nearly the size of a dollar, on the head, and also some smaller ones about the sacrum, with several marks of others elsewhere, which had healed.

I have copied the details of Dr. Macready's case, with his accurate description of the appearances of the sores, because I have never met with a similar one on record; and I therefore consider it a valuable contribution to our stock of knowledge on the subject of infantile syphilis, which is at most but scanty.

Causes.—Assuming a peculiar secretion with specific properties, contagious in its nature, and known under the name of syphilitic *virus*, as the now almost universally acknowledged cause of this disease in all its connections and consequences, I shall not stop to detail the arguments against the theory of the non-existence of such a poison, and of the action of *irritation* as the cause of all its primary effects, and of *sympathy* as affording a solution of all the subsequent phenomena, a theory whose refutation is recorded in every work on the subject, and confirmed by the daily experience of the profession. Indeed, if all other evidence were wanting of the specific character of such a virus which has perpetuated itself so long by sexual intercourse, has for so long a period given rise to a train of morbid changes impressed with so many marks of a common origin, and that, too, after months and years have elapsed, and which has retained its identity of character in the effects of its hereditary transmission, the late candid and scientific experiments of Ricord have furnished a mass of testimony which must put the question at rest. Its hereditary transmission alone would seem sufficient to remove every possibility of its propagation by mere *sympathy*, the only mode in which those who deny its specific character pretend at all to account for its remote effects.

There are, however, certain circumstances and conditions which may be considered in the light of *predisposing* causes, operating at times to develope its action, of considerable practical interest. Of these there are 1. *the change from fœtal to extra-uterine life*, which Ricord speaks of as one of the predisposing causes of constitutional syphilis. The fœtus, although infected in utero, is not unfrequently born healthy, and free from all external marks of disease, and these may develope themselves at varying periods after birth, doubtless under the influence of the entire change which takes place in its habits and mode of life at that time, and of the irritating causes of different kinds to which it now becomes exposed. All of these influences may operate to produce the cutaneous affection which then first exhibits itself, as we know that, in adults, certain causes, as pregnancy, puberty, the critical period of life, acute diseases, &c. sometimes excite to activity symptoms of disease of which the germ had remained concealed in the system.

2. *Dentition* in infants more advanced, sometimes, by its general irritating effect on the system, developes venereal affections on the skin in children of infected parents, and at the same time that it aggravates the symptoms when in the progress of cure, is one of the most frequent causes of relapses. Bertin mentions that children considered as cured, manifest fresh symptoms of the infection at the period of first dentition, and those considered healthy then sometimes exhibit venereal symptoms for the first time.

3. *Acute attacks of disease* have a similar effect.

4. *Weaning.*— Some children of infected parents continue free from every venereal symptom until the period of weaning, when the disease begins to show itself. A case of this kind occurred to me, and Bertin quotes a similar one. In other cases, symptoms re-appeared at this period after an apparent cure.

5. *Vaccination.*— In one case mentioned by Gibert, the child remained well until the age of four months, and then, soon after vaccination, presented well marked symptoms of tubercular sy-

philis with ulcerations, which proved fatal at the end of 15 days. The effect of this process in developing cutaneous affections of a different character in children predisposed to them, is by no means of unfrequent occurrence, and sometimes, indeed, exposes the physician to the unjust charge of having been the direct cause of the evil by the use of impure matter.

Mode of Communication.—Syphilis may be communicated to the infant at three different periods, and in several different ways:

I. Before birth ;
  1. By either parent, or by both, at the moment of conception ;
  2. By the mother during the period of utero-gestation.

II. At the time of delivery : by the actual contact of matter during labour.

III. After delivery ;
  1. By lactation ;
  2. By actual contact of matter ;

a. From the breast of the nurse ; *b.* by the kiss of an infected person ; *c.* by means of linen, spunge, &c., and by using the same vessel for eating or drinking.

Two different, and in other points opposing theories have led at different times to the denial of the *hereditary transmission* of syphilis.

Hunter denied that the secretions could be contaminated by the syphilitic virus, and consequently that infected blood or semen could communicate the disease to the offspring. He doubted very much whether a fœtus could be infected in the uterus of a diseased mother — but, doubtless unable to escape the conviction from facts which must have pressed themselves upon the notice of so acute and so discriminating an observer, he acknowledged that "he could conceive the bare possibility" "not indeed," to use his own words, "from the disease of the mother, but from a part of the same matter which contaminated the mother and was absorbed by her, and whether irritating her solids to action or not, may possibly be conveyed to the child pure as absorbed ; and if so, it may affect the child exactly in the same way it did, or might have done the mother."

Devergie, who on the other hand rejects the idea of a specific virus as the cause of syphilis, also denies that the blood can be infected, and that the parents can communicate the disease, unless suffering under some of the symptoms at the time. Acknowledging that parents with undoubted venereal symptoms may communicate the disease to the fœtus at the moment of fecundation, he denies that a specific virus is necessary for this, but says that it is transmitted in the same way as distinctive family traits, predispositions to certain affections, characters, habits, deformities, &c. In this way, he says, that in extremely rare cases, syphilis may be hereditary.

Others, on the contrary, have contended that it may be transmitted to the second, and even third generation, though with diminished intensity of its effects.

Its hereditary transmission may be considered as established beyond a doubt, and as a point on which very little difference of opinion now remains. For its proof, we have only to refer to the cases on record in which infants have presented unequivocal symptoms of infection at birth, and to which, too frequently, their lives have fallen a sacrifice, and still more, to the cases, constantly occurring, of their appearance soon after birth, and when the mother is entirely free from any primary sores on the genital organs to which they can possibly be traced —cases which, in the entire absence of all other means of infection, as well as in their nature and progress, cannot be mistaken by any one who is not striving to make facts accommodate themselves to some favourite theory.

Brown* testifies to the same fact of the occurrence of infantile syphilis soon after birth without any sores on the genitals of the mother at the time of delivery, and mentions it as "a singular circumstance, that the disease occasionally occurs in infants whose parents do not labour under manifest symptoms of the disease, either at the time of generation or during pregnancy."

The distinguished Hey of Leeds, in the last paper which he wrote, towards the close of a practice of 57 years, says that several instances had occurred to him of an infected mother communicating the disease to two, three, and even four children in succession, without any suspicion of fresh infection. Instances of still-born children from this cause occurred in cases observed by me. But it is needless to multiply evidence on a point so well established at the present day.

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* Cyclopæd. Pract. Med. Art. Hered. Transmiss. of disease.

Of an equally convincing nature also is the proof afforded by the birth of children with undoubted symptoms of the disease while the mother had never at any time suffered from any of its effects, either primary or secondary. Cullerier saw several cases of this kind in which the disease was evidently derived from the father, without any infection of the mother, and other writers have recorded cases of an analogous character.

Bertin mentions a case of a healthy woman, who had never had the venereal, who was delivered of a child which, at the age of six weeks, exhibited symptoms of infection. Her husband had had a chancre on the prepuce more than five years before, which was destroyed by caustic. In this case, the disease must have been transmitted by the semen of the father. Colles also alludes to cases of this kind within his observation.

One case under the care of a friend which I had an opportunity of seeing frequently, and the history of which I afterwards learned with accuracy, was of a similar character. The father of the child, a shoemaker, when an apprentice in Ireland, at the age of 19 years, had a discharge from the urethra with scalding, and a small sore on the penis, for which he took mercury so that his gums were sore two or three weeks, so much so, he says, that his teeth were loose. Four years afterwards, he married, without having had in the meantime any secondary symptoms whatever, and was not aware that he had the least discharge from the urethra at the time of his marriage. His wife had no suspicious symptom of any kind, so far as I could ascertain from the most careful examination — the child was born at seven months with a wrinkled skin, and a scaly eruption over the greater part of the body, and afterwards had opthalmia, and other symptoms of infection.

Bacot also met with a case still more in point. A gentleman was attended for the venereal disease just before he was married, and thought himself cured; his wife was delivered of a healthy child at the end of 10 months. During her second pregnancy, her husband was attacked with secondary symptoms, and her next child was tainted by the disease, although the mother had not manifested the slightest mark of it.

A case related by Gibert in illustration of this peculiarity in the transmission of this virus is still more singular, and perhaps ought to be admitted with some reserve as to this point. According to that, the husband of a woman who was four months advanced in pregnancy, contracted the disease, but without communicating it to her. Her infant, however, presented secondary symptoms six weeks after birth, without the mother ever having exhibited any. (Mal. Vener, p. 641.)

I would suggest here the importance of caution in admitting the absence of symptoms of this disease on the part of the mother, particularly since the light thrown on their investigation, when seated on the internal surfaces, by the use of the sepculum uteri introduced into practice by M. Ricord. The following case, also by Gibert, will confirm the necessity of this caution. A woman had borne six children, of whom three were born prematurely and died, and two, though born at full time, died soon after with venereal ulcers, while the last had a chancrous ulceration of the ear. She denied ever having had any symptom of the disease, though she well knew that her husband had had several venereal affections in his younger days. An examination with the speculum discovered red granulations and excoriations on the os uteri, though without any apparent discharge.

It would seem that the existence of constitutional symptoms on the part of the mother is necessary, at least in some cases, for the hereditary transmission of disease to her offspring. Wallace knew a female to have primary pustular sores during the whole period of utero-gestation, and yet have a healthy child; and this same female afterwards to have constitutional symptoms in consequence of the same primary disease, and after this, give birth to a contaminated child.

A point of considerable interest would be to determine whether gonorrhœa alone, of one or both parents, can ever give rise to any constitutional symptoms in the child. The sources from which my cases are drawn are unfavourable to the decision of this question, as I had no opportunity of treating either parent for the primary symptoms, and the accounts furnished by them of these symptoms must necessarily be vague and unworthy of confidence, on a point requiring such accuracy. Besides the cases of concealed ulcers in the urethra on the part of the father, and of sores in the vagina beyond the reach of the ordinary mode of investigation, the sore might have been so slight in either individual as to have attracted little or no attention, especially if complicated with gonorrhœa. The investigation of this point acquires additional interest from the fact now generally admitted that secondary symptoms do occasionally, though rarely, follow gonorrhœa in adults. The following case which occurred to me would seem to have some bearing on this subject, if the history furnished by the mother is entirely correct. She became pregnant at the time her husband had gonorrhœa, and soon after, had the disease herself, and said that "she had pain when she sat down," which was perhaps owing to sores on the genitals, and if so, gives a different character to the case. She suffered from pain in her back, head, elbows, and arms during gestation, and also from inability to use her arms; and at the end of eight months was delivered of a dead child. The following month she became pregnant again, was well during the whole period of gestation, and at the full time gave birth to a child, which at the age of five weeks, had first a spot on its nose, and soon after, marks of infection on the face, and then about the anus, and when first seen, had brownish discoloration of the face and forehead, flat tubercles about the anus, congestion of the mucous membrane of the nose, appearance of premature old age, &c.

Whether syphilis is transmitted more frequently through the father or the mother, is a point still unsettled. The elder Cullerier says more frequently by the father, but the younger Cullerier and Ratier (Dict. 15 vol. art. Syphilis) say, "parents with constitutional symptoms may give birth to infected children, especially when it is the mother."

II. *At the time of delivery.*—It is not unreasonable to suppose, that the disease may be communicated to infants by sores on the soft parts of the mother during the progress of labor, and recorded facts would seem to render it very probable that such has been the case. Others, again, deny the possibility of such an origin, and it must be acknowledged, that the circumstances of the case would lead us to anticipate their comparatively very rare occurrence. When we remark that the more common seat of such sores on the mother is on the external parts, and that these, as well as the internal surfaces which might possibly be the seat of them, are in a state of great distension, and also of excitement very unfavourable to the secretion of the contagious matter of such a sore, and still more, the dilution, and perhaps entire removal of such matter, even if secreted of full power, by the abundant discharge of the liquor amnii, or the more constant action of the free mucous secretion at such a time; add to this, the protection afforded the child by its unctuous covering, and also call to mind the precautions which would naturally be used when local sores were known to exist at such a period, we shall see that the chances of infection from this source can hardly be rated too low. At the same time, its occasional occurrence in this way can admit of no doubt, though, as on almost every other point, opposing testimony can easily be furnished on the subject. Bertin, whose recorded experience of actual cases exceeds that of any other writer with whom I am acquainted, maintains its frequent communication in this way, especially in the form of opthalmia — but *flat tubercles*, of which he speaks as one of the most common forms of constitutional infection, belong rather to the class of *secondary* affections, and it is the opinion of Gibert that all Bertin's cases of this kind can be referred to infection before birth, and that he can hardly be said to have more than one case to prove his point, and that this is open to criticism. Gibert never saw a case of *primary* disease in a new-born infant communicated in this way, and thinks, with Ph. Boyer, that circumstances at the time of birth favour but slightly this mode of infection.

Cullerier and Ratier consider its communication in this way as well established, by means of the matter of gonorrhœa or of a chancre. The symptoms in such a case will be of the *primary* class entirely, and will only appear some days after birth, the child presenting in the interval a healthy and natural appearance. I have never met with a case which I supposed communicated in this way.

Bertin even says that the infection communicated at birth, may sometimes be absorbed without local lesion, and constitutional symptoms only appear after a longer or shorter period of time — but that such cases are rare, and are obscure in their history.

III. *After delivery.*—The communication of the disease by the *milk of the nurse alone*, is a point which also seems to divide the opinions of authors. Colles is in doubt whether this infection takes place without ulceration of the nipple, and Devergie is of the opinion that it does not.* Alibert mentions a case communicated by a nurse, who was found to have a venereal ulcer in the throat—no mention is made of any affection of the breast. Bertin, however, says that he is convinced by facts that both the milk and the saliva will infect without any local disease in either case, when the case is very inveterate. Bell also thought that the nurse can infect by her milk without having any sores on the breast. Hunter, who denied that the secretions could be contaminated by the virus, of course did not recognise this mode of communication through the milk.

Bertin, as just remarked, thought that a child might infect its nurse by its *saliva*, and mentions a case in which the disease seemed to have been communicated in this way, or, at least, in which there were no sores in the mouth or throat. For this mode of infection, he thinks that certain circumstances are necessary, and also the lapse of a period of time sufficient for all the fluids to be impregnated with the virus.

The communication of the disease to the infant by *sores on the breast of a nurse*, was noticed by one author as early as the beginning of the 16th century, and is now among the best established facts—and also its communication to the nipples of the nurse by ulcers on the mouth of the child.

Hunter denies the possibility of the latter, and refers to cases which directly controvert his opinion. He details two cases, in which the infection was evidently communicated in this way—one, in which a lady, her two children and a wet nurse, were infected, and in the other, three children, and three wet nurses. He describes them under the name of "diseases resembling the lues venerea," the touch-stone being, according to that distinguished man, as is well known, the effect of mercury on them—a position which more recent and more extended observation has proved to be entirely untenable — and the uncompromising adherence to which shows how much brilliant genius can be warped and chained down by a blind devotion to theory. Mr. Hey remarks in reply to this — "Now, if this reasoning is allowed to have validity, we may suppose the converse of it also to be valid. If the disease in question have the usual symptoms of syphilis, and will yield to no other remedy than mercury, we may fairly conclude that it is syphilitic."

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* He supports his view by a case in which a child was nursed four months, remaining healthy all the time, while the nurse had sore throat, pains in her bones, and nodes—the child was perfectly healthy at 10 years of age, and had never exhibited a single venereal symptom. (Vol. ii. p. 103.)

The communication of infection in this way is established by numerous recorded cases, and is familiar to every practitioner who is in the habit of meeting with the disease. Several of my cases afford unequivocal evidence in its favor; in one, the disease was communicated to the breast of a female by an infected child; this female, after suffering a long time with secondary symptoms, was delivered first of a dead child, destroyed by this cause, and afterwards, of two living children in succession, both of them with unequivocal marks of syphilis, of which one of them gave the most decided proof by communicating the same disease to a perfectly healthy nurse, who afterwards suffered from constitutional symptoms.

Gibert gives an interesting example of this mode of infection. The disease was communicated to a mother by a strange child which she took to nurse, and given by her to her own child, which she was nursing at the same time, and was, by this infant, communicated to her sister, a girl 14 years of age, who had the immediate charge of her.

This case, which has already been referred to in illustration of the influence of vaccination in the development of the latent syphilitic symptoms, is of sufficient interest to warrant its transfer to our pages, especially as the work has not been translated to my knowledge.

A mother of a healthy constitution, and who had never been ill, went to Paris for a child to nurse, at the same time that she was still nursing her own. The strange child remained perfectly healthy during four months, — was then vaccinated, and soon after presented well-marked symptoms of tubercular syphilis, with ulcerations, which proved fatal at the end of 15 days. A few days after its death, the breasts of its nurse became sore, and ulcerations formed on it, which were afterwards followed by a general tubercular eruption. Two months after the appearance of the disease in this woman, her own child, which she had continud to nurse, became ill, and when seen by Gibert, then 15 months old, presented a well characterized chancre at the right corner of the mouth, a round and deep ulcer on each side of the opening of the fauces, and flat tubercles on the scrotum and thighs, some of which were superficially ulcerated. The sister of this little one, who was 14 years old, and who had the particular charge of it, had also flat tubercles on the perinæum, at the vulva, and on the upper and inner part of the thighs, without any primary symptom, or at least any affection of the mouth that could be discerned by the history of the case, or the examination of the parts. The father remained well, though he had connection with his wife during the existence of the disease, and a little boy four or five years old, was also unaffected. The infant thus affected with the *primary* sore, (the ulcer at the corner of the mouth,) enjoyed good general health, and a strong constitution, which is not common for children born with venereal infection.

Hey mentions the case of a blind woman, whose mouth became diseased by drawing the breasts of an infected woman, and who communicated the disease to several women by drawing their breasts — one of whom was delivered of a dead child at the end of seven months, and afterwards gave birth to two infected children in succession, although she had previously borne three healthy children in which the disease did not appear until some weeks after birth. In another case of his, four successive children were affected in this way.

Bertin also relates a case of infection received by a mother in this way and communicated to her offspring; and indeed, proof might be still further multiplied, if any more were wanting to establish the point.

This general law of communication of disease to the child by the nurse, and to the nurse by the child, has some exceptions curious as well as interesting, and which can only be learnt by tracing their operation in well authenticated cases of good observers.

Bertin says that a healthy woman, who has just nursed a strange child with ulcers in its mouth, seems in some cases, to be capable of communicating the disease to her own nursing child, without being herself infected, and quotes a case in proof in which chancres appeared on the tongue and palate, followed by buboes (as he calls them) on each side of the neck, in a child three months old, whose parents had given birth to four healthy children, and had never had a venereal symptom — the mother having eight days before nursed a diseased child with opthalmia and chancres in its mouth. An analogous fact may be found in the cases in which a healthy woman, after recent connection with a diseased man, may communicate the disease to his successor without being herself infected, she merely seeming as the depository and vehicle of the virus, her mucous membranes being, from some cause or other, less susceptible than usual.

At the same time, the disease is not always communicated by the nurse to the child, or the reverse.

Bertin says a child may be nursed a long time by an infected woman, without becoming itself infected, and that an infected child may suck a healthy nurse several months without communicating the disease — circumstances depending, probably, partly on the form of disease, and partly on the existence of a certain insusceptibility, which is among the well known facts with regard to both the primary and secondary forms of syphilis in infants as well as adults.

A curious fact mentioned by Colles is deserving of notice in this connection. He says he has "never seen or heard of a single instance in which a syphilitic infant, (although its mouth be ulcerated,) suckled by its own mother, had produced ulceration of her breast;" "whereas," he says, "very few instances have occurred where a syphilitic infant had not infected a strange hired wet nurse, and who had previously been in good health:" that is, he adds, "a child deriving the infection from its parents, never causes an ulceration in the breast of its mother." The conclusion from this would seem to be, that the system of the mother is so charged with the virus as to render it proof against the kind of contagion presented by secondary ulcers in children.

Many cases might be quoted to prove the communication of the disease through the medium of kissing, using the same spoon or vessel for eating and drinking, or by means of sponge, linen, &c.

Bertin relates the case of a woman with chancres on the tongue and roof of the mouth, who infected a child three years old, either by kissing, or by using the same vessel for drink—also another case, singular both on account of the primary symptoms produced (which were a chancre and a bubo) and the only mode in which their communication could be accounted for—which was that an aunt, affected with syphilis, was in the habit of frequently kissing the child, (an infant four months old,) and sometimes of giving it her breast to hush its cries, and of washing its genital organs with water, which she first held in her mouth to take off the chill. Both parents were healthy before, but an ulcer soon after appeared on the breast of the mother, which was soon followed by ulcers in the throat, and later by tubercles on the legs, thighs, and arms, precisely similar to those on her child.

The following case which occurred to me would seem to illustrate two modes in which the disease is communicated, one of them not very common. A man, 56 years of age, applied to the Dispensary with a large patch of superficial syphilitic ulceration extending across the whole of the upper part of the chest; there was also a scar of an ulcer on the lower part of the sternum, and the marks of several large ulcers on different parts of the body; there was also an ulcer about two inches long on the right side of the face, parallel with the ear, and a short distance from it, and also a small ulcer at the left angle of the mouth. He had been married 32 years, and denied ever having contracted the venereal disease by sexual intercourse, but said that about eight or nine years before, his wife took a child to nurse which had an eruption over its body, of which it afterwards died, and whose mother was previously known to have had the venereal, and that he was in the habit of fondling this child on his breast, and holding it up to his face, and that he before that never had an eruption of any kind on him. His wife had sores on her breast from nursing the same child. The impression made at the time by the age and manner of the patient, and the consistency of the history given, after close and repeated questioning was entirely in favour of its truth, an impression very much strengthened by the absence of all marks or scars of primary disease either on the penis or the groin. We may therefore consider this as a case in which the disease was communicated to the tender and delicate skin of the mother's breast, and the more hardened and less sensible skin of an adult past middle age.

Colles gives an instance in which a cook in a family infected a child one and a half years old, which communicated the disease to the dry nurse of the child through the medium of a small sore which she had on the thumb; both cook and the nurse had secondary symptoms.

We shall find also that the child can not only infect the nurse by direct contact of its mouth with her breast, but that it can also be the means of communicating the infection to the other members of the family. I have already alluded to one case in which it was communicated to a child fourteen years of age, and another to a child three years old. Among the families of the lowest classes in Europe, where the articles of furniture are few, and the children are all crowded together in one bed, it is no uncommon circumstance for several in one family to be infected. Colles gives an interesting group of cases of this disease in which it was introduced into a healthy family by a servant girl who had been dry-nursing an infected child in another family, which had died. She first communicated it to the infant which she had in charge while being weaned; by the infant it was communicated to its mother, who gave it to her husband, and also to its sister, a girl 12 years old.

An exception to the ordinary laws of communication is that in which the virus is sometimes absorbed into the system of the nurse without any affection of the breast, and into that of the child, without affecting its mouth locally.

Chances of escape from contamination.—There can be no doubt that in many cases, children of infected parents escape the contamination, and exhibit no symptoms of the disease, either immediate or remote. What are the causes which influence such a result, and what the period, kind, and duration of treatment most likely to secure it, are questions of difficult solution; nor have any statistics been furnished of the proportion of those who thus escape; nor have I met with any tables intended to show the connection between any particular primary or secondary symptoms and hereditary transmission. These are all questions of interest yet to be investigated by those whose field of observation affords them the means of doing it. Bertin saw, that in the Hôpital des Venériens at Paris, a certain number escaped; some of these were in cases in which the mother during pregnancy had been treated for a longer or shorter period of time, and others in women recently diseased. In other cases, on the other hand, though but a small number, the children presented no venereal symptom in more than a year while under his observation, although the mothers had never been subjected to any treatment for the disease, and suffered from it in a severe and inveterate form: the children seemed to enjoy a happy immunity from infection. Gibert mentions a case in which a child continued to nurse its mother, who had chancres on the breast, ulcerations in the throat, and a profuse discharge from the ear, and which at the age of two and a half months, did not present the slightest trace of any venereal symptom.

Source of Infection.—It is sometimes very difficult, and perhaps at times impossible to decide, which was the first infected, the child or the nurse. The following are the conclusions of the elder Cullerier on this point:

1. If the breast of the nurse and the mouth of the child are alone affected, and both at the same time, the means of diagnosis must be sought for;
2. If the breasts only are affected, and the child has ulcers in the nostrils, flat tubercles, or ulcers or scabs on different parts of the body, with other marks of an old infection, you may be sure that it has given the disease to the nurse;
3. But when the nurse has secondary symptoms, and the child has only sores about the mouth, or on the nose, or about the anus, there is equal certainty that the nurse has infected the child;
4. When the child has secondary symptoms, the disease is probably hereditary;
5. When it is secondary in both nurse and child, we can only rest on probabilities derived from the health of the parents, or that of the child, or that of the husband of the nurse; or from the exact time of its first appearance, which it is sometimes very difficult to decide.

The *form* and *seat* of the local disease in infantile syphilis will vary with the mode of communication; whether it be hereditary, or communicated by contact of matter; and this whether at time of birth, or at a subsequent period.

The very few cases of *local sores* seen at birth have been of the form of chancres, pustules, ulcers, vegetations and excresences, in nearly every case on or about the genitals, and these principally in females.

The forms communicated during the passage of the child at birth are said to be

1. Purulent discharges from different mucous membranes, and especially from the conjunctiva;
2. Flat tubercles about the genitals and anus;
3. Chancres, also more commonly about the genitals.

When infants perish before birth from *constitutional* taint, they present, when expelled, an appearance of maceration, and the cuticle becomes detached on the least touch, from the soles of the feet, toes, hands, &c., and sometimes from nearly the whole, or even the whole surface of the body. Sometimes they survive a partial state of this kind for a few days, though generally a much shorter period, even if alive at birth. This appearance, however, is not entirely confined to infected infants, but is seen whenever the fœtus has died from any cause some time previous to its expulsion.

Hereditary syphilis, after birth, more or less immediately assumes the form of

1. Superficial ulcerations of the lining membrane of the mouth and lips, and particularly of sores at the commissures of the lips; and dull or livid redness at the junction of the alæ of the nose with the upper lip; and also of sores about the space between the lower lip and chin, and the front part of the neck;
2. The brownish or copper-coloured spots, and patches of the same colour on the forehead, &c., already described;
3. Pustules of the phyzacious kind, followed by thick, dirty yellow or greenish scabs, and afterwards by circular, excavated ulcers, with elevated and indurated edges;
4. Flat tubercles about the anus, in the folds of the neck, &c. When about the anus, these, as well as primary chancres about that part, are almost always of an elongated shape, usually more or less oval, with one of their extremities pointing toward its orifice, in consequence of the longitudinal direction of the folds of the mucous membrane of the rectum; when in the front part of

the neck, they are of the same shape, with their long diameter situated transversely, in consequence of a similar arrangement of the integuments of that part.

When communicated to the child by the nurse, the disease appears first on the lips, and especially at their angles, in the mouth, on the gums, &c., and appears in the form of round or sinuous, excavated, grayish ulcers.

When the infection is received by the contact of sponge, linen, &c., it is in washing, and is then more commonly seen first about the genitals and anus. When from the use of the same vessel in eating or drinking, the first signs are found in or about the mouth, or on the lips; and on the cheeks most commonly, or the lips, when communicated by kissing.

In the nurse, it first appears, of course, either on the nipples or on the breasts near them; on the former of which, it generally commences with an excoriation, and is soon followed by ulcers, more or less circular in their shape, sometimes oblong, with grayish surface, &c.

Time of appearance.—The precise period at which the symptoms first make their appearance is far from being uniform or definite, but still can be brought within sufficiently definite limits. It must necessarily be affected by a variety of causes, as the mode of communication, the greater or less activity of the matter, and the greater or less energy of the absorbent system, the age, strength, &c., of the child, &c. &c.

1. It is well established that a certain proportion escape the different modes of infection altogether;

2. In some rare cases, as has been already remarked, they appear at birth;

3. Some children are born in a state of apparent health, and remain so several months, and even a year, when symptoms of infection exhibit themselves, more commonly about the period of first dentition, or soon after being weaned, or after vaccination;

4. In other cases, marks of disease begin to show themselves within a few days after birth; this is rarely the case, except when the infection is communicated during the time of labour, when Swediaur says they generally appear within the first eight days;

5. But the more common time of appearance of hereditary sy-

philis is from the third to the sixth week after birth; this is the period stated by Gibert, and this accords with my own experience. Bertin states the period at one, two, and three months after birth, in the majority of cases which he saw, and sometimes later. He has seen different symptoms come on from two, three, or four days after birth, to three or four months. Colles says from eight days to as many weeks. Lagneau says that pustules appear from the fourth to the fifteenth day; but sometimes not until after one or two months. In 28 cases of which I have notes, the first symptoms of infection appeared at the age of one month and under, in nine cases; between one and two months, in six; between two and three months, in six; between three and six months, in two; between six and twelve months, in three; at or about twelve months, in two; so that of the 28 cases, 21 appeared at or before the end of the third month.

6. When communicated by kissing, using the same vessel, the same linen, sponge, &c., they may, of course, appear at any period. In the case of a child one and a half years old when first exhibiting marks of the disease, Colles speaks of its age as conclusive against its having derived the infection from its parents.

The *order* of the symptoms is not regular, but must depend more or less on the circumstances which have already been mentioned.

1. Sometimes the alteration of the voice is first noticed;
2. At other times, the snuffling;
3. But more frequently the eruption about the anus and genitals appears first. Colles says "it is invariable that when the throat is first affected, we may expect shortly to see the affection of the anus, and vice versa."
4. Sometimes the fold between the lip and chin, and the folds in the front part of the neck, are the parts first affected, and at other times, the first indication is a coppery hue along the joining of the upper lip and nose.

With one or more of these local symptoms, may be associated one or more of those mentioned of a general character, as earthy hue of skin, Cachexia, peculiar expression of old age, desquamation of cuticle, erythematous affections of different parts, discolouration of forehead, &c.

Complications. — Syphilis in infants and children may be complicated with a number of other affections incident to that period of life, which may both affect its prognosis and its treatment:

1. Hooping cough;
2. The various derangements accompanying dentition, as general irritability, diarrhœa, convulsions, &c.;
3. Derangements of the digestive organs not connected with dentition, and especially diarrhœa;
4. Different exanthemata. One of my cases was complicated with rubeola and one with variola;
5. Scrofulous affections;
6. A variety of cutaneous diseases of a character entirely different.

Diagnosis. — Both the local and general symptoms of syphilis in infants, and particularly those affecting the skin and mucous membranes, are liable to be confounded with lesions of these structures entirely unconnected with any such cause, and the necessity of the greatest caution in deciding upon its existence cannot be too strongly impressed on the mind. We must remember that our decision involves a serious question of morals, as well as of therapeutic interest and of professional tact; that even the shadow of an untrue suspicion may taint the pure fountain of domestic peace, and that not even an allusion should be ventured on without the strongest grounds for its foundation in truth. In legal medicine, its communication from a nurse to a child or the reverse, besides its bearing on social interests, may involve a question affecting both property and character. The greatest prudence, therefore, as well as skill, must be exercised in cases involving points so delicate and important. No single symptom, however well marked, should be relied on for a decision. All the light which can be furnished by the period at which the symptoms first appeared, the order as well as manner of their developement, the accompanying circumstances, the causes which may have had an influence, and by the exact history of the case, as far as it can be ascertained, should be carefully sought for, and when the information from all these sources leaves us still in doubt, we are called on to suspend our opinion for a short time at least, and to watch the effects of remedies and the farther progress of disease.

We must remember that nearly, if not quite all of the general symptoms frequently accompanying the disease may originate under circumstances entirely free from all suspicion of any foul taint, and that most of the local ones are liable to be confounded with other affections of the same parts also arising from common causes of disease. A diminutive, feeble child, with a shrivelled and withered skin, and with the peculiar aspect of premature old age, should not be hastily set down as an infected one, even if there should be, besides, redness, and perhaps excoriation, or even superficial ulceration about the nates of the genital organs, nor even if purulent opthalmia be superadded to these. An enfeebled state of the mother's health during gestation may give rise to a feeble and diminutive offspring, while acrid discharges, even when every attention is paid to cleanliness, and still more when this is neglected, not unfrequently produce irritation, and even ulceration about the nates, groin, scrotum, and upper part of the thighs; and it is well known that purulent opthalmia is far from being of rare occurrence in new-born infants. In addition to this, the recollection of the different forms of cutaneous disease of an entirely different nature which may exist during the earlier months, and of the changes which a cachectic state of the system, together with neglect, and perhaps improper applications may impress upon them, should put us still more on our guard against an erroneous conclusion. Even when a sore appears on the breast of a nurse, the liability of this part to become sore from the ordinary causes in operation, should be borne in mind, and still more, the possibility of the existence of a gangrenous and malignant form of aphtha, which might occasion ulceration of that part, and this be followed by inflammation of the auxillary glands, and even more serious accidents. At the same time, however, that we are thus prudent in the expression of an opinion which might compromise the feelings, and perhaps the happiness of others, the slightest indications of infection should awaken suspicions, and give rise to the most careful observation, until the lapse of a sufficient period of time either confirms or dispels them.

It has been remarked of these affections that, although well characterized, they are the most frequently mistaken, and, by a singular contrast, are the most frequently supposed to exist, circumstances owing to the different forms which they assume on the one hand, and to the number of vague and equivocal symptoms which have been erroneously attributed to this infection on the other. Dropsy was considered by one writer as a constant effect of this infection—and among other symptoms of an entirely different character which have been traced to this origin, may be mentioned scorbutic spots and ulcers, mucous and muco-purulent discharges from the vulva of children and young girls, ulcerations in the groin, under the axilla, about the sacrum, &c., arising from neglect and want of cleanliness, the erythematous and erysipelatous inflammation so frequent in new-born infants, excoriations of different kinds, a great variety of cutaneous affections, and also hardening of the cellular tissue, which was for some time attributed to this in the large hospitals, but which has since been found to occur in children entirely free from all such taint.

It is often very difficult to distinguish mucous and muco-purulent discharges from different orifices of the mucous membranes in infants and children from those of a syphilitic character, nor is there any certain diagnostic mark between them, without the aid of other symptoms, or of the history of the case. Bertin expressly acknowledges this with respect to venereal opthalmia, and says that, when it is the only symptom, and no light is afforded by the history of the case, the existence of infection is very doubtful. We must investigate the preceding circumstances, the accompanying symptoms, and the operation of other causes. The same is equally true with regard to the discharge from the vulva, which we must remember is by no means of uncommon occurrence during the period of first dentition, especially in strumous children.

Some of the forms of infantile syphilis affecting the skin are liable to be confounded with certain modifications of other cutaneous diseases entirely unconnected with any suspicious origin; while others, and perhaps we may safely say, the greater part, present such well marked characteristics as to cause but a trifling degree of embarrassment to one at all familiar with diseases of the skin in general.

The syphilitic ulcer with its almost circular shape, its excavation, its cut and perpendicular sides, its elevated and indurated edges, its hardened base, its indolent surface, covered with a thick, tenacious, grayish or tawny matter, surrounded by its dull red or copper coloured areola, especially when seated on or about the nates, or upper part of the thighs, stands out in bold relief from among all the other forms of cutaneous disease; while the brownish patches of discolouration on the forehead and even the eyebrows, and more especially the brown or reddish brown or *copper coloured* spots, as they are usually called, thickly scattered on the extremities and sometimes partially on the trunk are, to my mind, entirely pathognomonic of this affection. The superficial grayish aphthous-looking ulcers about the lips, the angles of the mouth, and especially between the lower lip and the chin, and also in the upper part of the front of the neck, are to me strongly marked symptoms of infection. The flat tubercles, too, which appear about the anus should always excite suspicion, and if they are accompanied by any of the symptoms enumerated as belonging to the second class, and have been preceded by any of those which have just been mentioned, are very likely to have an infected origin. Pustules also of an ecthymatous character, covered with hard, dark coloured scabs and surrounded by a copper colour areola, and particularly when abundant, and selecting the nates and their neighbourhood for their seat, may also be reckoned among the more certain marks of constitutional disease.

The principal cutaneous affections of a different nature with which those of syphilis are liable to be confounded are *Erythema intertrigo, Eczema, Impetigo of the hairy scalp, Rupia escharotica, Psoriasis, Flat tubercles,* (*or Condylomata,*) *and superficial ulcer about the anus.*

The superficial ulcerations which sometimes accompany *Erythema intertrigo* among the folds of the neck, and in the groin, and between the nates, in cachectic children, especially when neglected, or aggravated by improper applications, might be mistaken for venereal—but they will generally be surrounded by an inflammatory blush extending over a considerable surface, which will also be of a brighter colour than the more limited and more livid redness about venereal ulcerations—they are also of much shorter duration, usually yield with comparative ease to measures of hygiene, and especially to frequent ablution with warm water and simple dressings, and have much less tendency to return. Venereal ulcerations remaining sometimes weeks, with little or no change, when not irritated by injudicious applications, or healed by the proper ones.

The elementary form of *eczema*, that of minute collections of serum, and these occurring more or less grouped in children, the sensation of heat and of itching accompanying them, which is sometimes one of the most distressing symptoms attendant on it, its comparatively short duration when in the form of E. *simplex*. the bright inflammatory blush surrounding it, and the regular stages through which it then passes to drying up, either with or without the rupture of the vesicles, and being succeeded by minute yellowish scales, which fall off, and leave only unnatural redness, which itself disappears after a moderate period of time, sufficiently distinguish this species of eczema from the effects of syphilitic virus—while the tendency of eczema to assume a chronic form, and when this is the case, to spread, and that often rapidly over a greater or less surface, and to present either bright red surfaces oozing serum, or, as the inflammation subsides, covered with minute thin, yellowish scales, with great itching and heat, present local points of difference sufficient to distinguish it from the more limited, grayish, indolent, superficial ulcers of syphilis, surrounded with a livid areola, and unattended by any morbid sensation whatever; while the accompanying and preceding symptoms, and all the light to be derived from the history of the case must be sought in this as in all the forms of cutaneous disease to assist in the diagnosis.

In *Impetigo of the hairy scalp*, (or *Crusta lactea* of authors,) the eruption is much more abundant, and covers a larger surface than in a syphilitic disease, unless that has progressed to a degree which would be marked beyond doubt by other symptoms; the pustules are surrounded by a bright inflammatory blush instead of the peculiar coppery hue of syphilis, the scabs are thicker, of a yellowish or greenish-yellow colour, are rarely followed by any scar, but leave a dull red spot, which is the seat of slight desquamation for some time, instead of that brown or livid, or "coppery yellow colour," as it has been called, peculiar to the remains of venereal pustules. The pustules of impetigo are rarely seen at or very soon after birth, but usually during the period of first dentition, and very frequently occur in children in perfectly good health, while a pustular syphilitic eruption of any extent would almost always be accompanied by other local marks of the infection, and probably by one or more of those enumerated in the list of general symptoms.

Rupia escharotica is rarely, if ever, seen in new-born infants. The cases in which the diagnosis is most difficult, occur in children from six to twelve months of age, when both the scabs and the succeeding ulcerations frequently bear a strong resemblance to the bullo-pustular form of syphilis, as it is called by Green, or the syphilitic ecthyma of the French; especially as this name is only applied to the particular variety of disease met with in children reduced to a great degree of cachexia by want of proper nourishment, neglect of cleanliness, and privations of different kinds, and in this state, often exhibiting some of the general symptoms met with in cases of syphilitic taint. So far as my own observation extends, the seat of Rupia escharotica, and also of *Ecthyma cachecticum*, which is entirely analogous in its character, and in the circumstances under which it appears, is much more frequently on the neck, shoulders and back, and about the forearms and legs, while syphilitic pustules are more frequently seen about the nates and genitals, and the upper part of the thighs. In many cases, however, we shall have to depend quite as much in our diagnosis on associated symptoms and the history of the case, and perhaps also on the effect of treatment, as on the peculiar characteristics of the cutaneous affection itself.

Under the name of *Psoriasis infantilis*, Plumbe describes a cutaneous affection occurring in infants from birth up to three years of age, which, he says, has often been mistaken for the consequence of venereal taint of the parents, and which, minute and extended inquiry has led him to conclude "has no connection with any form of venereal disease, except indirectly, that is, when a syphilitic affection may have combined with other causes in reducing the strength of the mother, or otherwise depriving the child of healthy sustenance;" and which, he adds, is moreover found to occur when the parents on neither side can be liable to suspicion. He speaks of this affection as almost exclusively the concomitant of poverty under its most depressing form, and describes it as characterized by red patches of inflammation on the cheeks, chin, forehead, nates, abdomen, &c. some of the patches on the face being small and irregular, and others large, and approaching a circular form; some covered with horny scabs which crack in a few days and exhibit fissures, and others covered by thin scales; rapidly detaching themselves, and succeeded soon by others of a similar kind, which soon follow a similar course. The eyes sometimes become inflamed, and the mucous membrane of the nose becomes inflamed and thickened, giving rise to snuffling, difficulty of respiration, and some fluid discharge. He says that the secretions of the liver will be found disordered, and that small doses of hydr. c. creta, with an occasional brisker purgative, with tepid bathing, frequent ablutions of the parts affected with warm water, and a change to a purer atmosphere, and more efficient nourishment, have, in most cases, been adequate to a cure. In the form of disease described in this paper under the form of brown or copper-coloured spots and patches, these, when on the legs, and arms, and body, (their most usual seat,) have been nearly circular, some of them covered with thin scales; and when on the forehead, of larger size, and of a more irregular shape. They have appeared where the patients had not suffered from the extremes of privation spoken of by Plumbe, but have been accompanied with snuffling, a more or less earthy hue of the whole skin, and sometimes with the expression of premature decrepitude: and so far as relates to their venereal origin, I failed in but a single case to trace infection on the part of one or both parents; and in that one case, peculiar circumstances prevented the examination from being carried as far as was necessary to settle the point. If they were not connected with, and indeed dependent on such a taint, it is probable that they would be oftener met with among the children of those who suffer the extremes of poverty, and who furnish so many of the cases brought to our public institutions. Dendy speaks of red or brown, or extensive fawn-coloured stains, as most usually characterizing intra-uterine syphilis. It may be proper, however, to remark in this place, that Colles says that "an eruption of a few copper-coloured spots is not unfrequently seen about the anus and genitals of infants, otherwise perfectly healthy:" these he attributes to inattention to cleanliness, and sometimes to a disordered state of the alimentary canal, and says that they must not be hastily pronounced to be venereal. I can only say, that I have not met with such cases; and from my own observation, should be inclined to consider such appearances as strong presumptive evidence in favour of constitutional taint.

Flat tubercles, in children as well as in adults, are said to be the result of mere neglect of cleanliness and want of nourishment, and to yield to the warm bath, frequent washing, good breast-milk, or nourishing food. Their occurrence from these causes is, however, so rare, as to render them very suspicious symptoms. The diagnosis in such cases must be founded on accompanying symptoms and the history of the case.

Superficial ulcers about the anus, situated on the rugous folds of the skin, have been confounded with venereal affections, but arise from other causes. They have generally one part of their edge rather deep, and the rest of the edge thin, are indolent, not painful, last for weeks or months, and coexist with an unimpaired state of the general health. (Colles.)

Fissures also take place *at the anus*, commencing on the skin, and extending in upon the mucous membrane of the rectum. Colles says that these are not venereal, when accompanied by no other symptom.

Aphthæ on the mouth, tongue, posterior fauces, &c. are sometimes mistaken for venereal sores; but aphthæ are usually attended by fever, especially when they have continued some time which is much more rarely the case with venereal sores; *aphthæ* are much more rapid in their course, and more limited in their duration, venereal sores progressing slowly, and lasting for an infinite period of time, and very rarely terminating spontaneously, except in the case of pregnant women; *aphthous* sores are white in the centre, and surrounded by a red circle, chancrous sores have usually hard borders; *aphthous* sores sometimes present the lardaceous aspect of venereal sores, and then the diagnosis is more difficult; *aphthous* sores disappear under the use of acidulated, tonic, or stimulating gargles, and of means for correcting gastric and intestinal derangement, which are ineffectual in removing chancres.

Congestion of the mucous membrane lining the nostrils, either with, but most usually without discharge, would be liable to be confounded with no other affection of that part, except that accompanying catarrh; and from this, it is easily distinguished by the entire absence of any of the other symptoms of that affection, as sneezing, watery eyes, &c. and by its duration, as well as the entire absence of febrile excitement. This symptom has hardly been absent in a single case which I have seen of constitutional syphilis in infants, and is so marked that I detected one case by the peculiar snuffling produced by it, when merely passing by where the mother was holding the child. It is not always so obvious; but when the child still nurses, we shall find on inquiry, or perhaps discern on examination, that it is very much incommoded when sucking, and has frequently to intermit, on account of this obstruction to the passage of air through the nose.

The *seat* of the disease will sometimes afford us some collateral aid in making a diagnosis — remembering that the parts of the body more frequently affected are the chin, the mouth, the forehead, the genital organs, and their more immediate neighbourhood.

The *effect of remedies* will also occasionally have no little weight in the decision of the question. The continuance of the disease, with little or no change, under the use of the ordinary means for removing the causes on which the other varieties of cutaneous disease more commonly depend, should awake a suspicion as to its character. Some of the cachectic forms of these affections, too, which are those most liable to be mistaken for syphilitic, would, in the majority of cases, be more likely to be aggravated than cured by mercurial remedies.

But one of the sources from which, in cases of doubt, we often derive the most efficient aid, in the *history of the case*, which should always be investigated with the greatest minuteness both as regards

1. The disease itself; and
2. The source of the infection.

With regard to the disease itself, we must inquire,

1. As to the precursory symptoms;
2. The original form it presented;
3. The time of its appearance;
4. Its progress and mode of developement.

But a much more difficult, frequently much more delicate, and always more important task, will be to inquire into the origin of the contamination, which necessarily involves several points:

1. The former infection of the parents, and especially, of the father before marriage; to learn which, with accuracy, we must ascertain,

a. Whether there are any marks of the disease in the form of scars on the genitals, or on the groins; marks of ulcers on the body, or of discolouration left by eruption; or proofs of ravages on the tonsils and fauces;

b. Whether any secondary symptoms have ever existed in either parent; and

c. Whether any exist at the time; and if so, their nature, duration, &c.

2. The habitual occurrence of abortions without evident or satisfactory cause. The influence of syphilitic infection as a predisposing cause to this is established beyond controversy, and can never be too carefully investigated; the ordinary exciting causes are usually necessary to give rise to the abortion each time, and hence, it may occur at any period. When spontaneous, it is ordinarily during the first months of gestation, and not unfrequently at the menstrual periods. Lagneau says the second month is most dangerous; they sometimes occur during the sixth or seventh month.

3. The giving birth to dead children with the morbid changes formerly alluded to, as a softened or macerated state of the cuticle, emaciation, &c. sometimes with purplish discolourations, &c. &c. It is not unusual for infected women to give birth to several dead children in succession, marked with these morbid alterations of the cuticle as well as of the colour — even though in an apparently perfect state of health, and without having ever suffered from any venereal symptom whatever, either primary or secondary, and even, too, sometimes, when the father exhibits no symptoms of the consequences of the disease; we must bear in mind, however, that this wrinkled and loosened state of the epidermis may be owing to any cause producing the death of the fœtus some time previous to its expulsion;

4. Or the child may be born alive with more or less of these

marks, and feeble and emaciated, and survive but a few days, or a week or two;

5. The fetid smell of the liquor amnii is also mentioned by Bertin as one of the diagnostic marks; but this is doubtless a mere consequence of the previous death of the fœtus, and would be accompanied by marks more decisive.

The notes of my cases do not enable me to furnish, with the accuracy I could wish, the comparative frequency of the birth of dead or diseased children, or of abortions, as in some of them I neglected to investigate this point at the time. On a review of them, however, I find that in four cases, there had been children born dead; in three, diseased children; (in one case, two;) two births at seven months, (the children diseased in both cases;) and two abortions, one at the third month, and one at the fifth, without any evident cause—making nearly one half of the whole number in which one or the other of these circumstances occurred. After deducting the cases of first children, of which there were some, and making allowance for the probability of other cases among those of which the history is incomplete, we shall derive, even from this summary, evidence in favour of the value of these occurrences as means of diagnosis.

The *anomalous character* of the eruption, as well as of some of the general symptoms, will sometimes assist us in the diagnosis of venereal affections of infants as well as of adults, or at least, by involving the case in doubt, awaken our suspicions. The aphorism of Boerhaave, "in dubio, suspice luem," is one which we shall sometimes find of essential service in our investigation of these diseases. I need not say, that we should always keep our *suspicions* within our bosoms until they ripen, if just, into almost absolute certainty, and that we may often practise on them with safety ourselves, when it would be cruel and perhaps dangerous to impart them to others.

To these aids in the diagnosis of constitutional syphilis in infants, we ought to add that furnished by the impression made by the symptoms as a whole, and which is frequently experienced at the first sight of a case by one familiar with it, a certain *pathological physiognomy*, which serves as an index often at the first glance.

Causes of death.—Our patients may die from

1. Marasmus, or a gradual wasting away from imperfect nutrition, either in consequence of the depressing influence of the virus, or from some local symptoms interfering with the process of taking or swallowing food.

2. From the irritation of the disease when the ulcerations are extensive, and sometimes when they are destructive in their character, progressing inwards;

3. From some complications which may prevent the use of the proper therapeutic means; and

4. We must be careful that they do not die from the *remedy*, mercury, given in too large quantities at once, or continued too long.

Prognosis. — Our impressions as to the fatality of this disease have doubtless been very much influenced by the statistics of the large institutions to which I have already referred; and any one at all familiar with the previous state of a large proportion of the little patients received into them, the wholesale manner in which they are disposed of, both during life and after death, and the great mortality connected with the mere residence in them; the ordinary causes of disease seeming to act there with increased severity, independently of the added exposure to other diseases, will hardly be willing to recognise the results furnished by them as a fair criterion of the chances of recovery from syphilitic infection. Nor must the opinions of some writers of deserved celebrity be received on this part of the subject without reserve: at the same time that we must take into consideration the light which experience is constantly shedding on the subject. Swediaur says, "la plupart des enfans qui naissent avec la vérole, meurent bientôt après." He says that there was in his time one of the reigning families in Europe of which no child survived a certain age, before the mercurial treatment was used.

Lagneau says that the majority of children born with constitutional syphilis do not survive the period of first dentition; and that if they do, their health is always feeble and precarious, notwithstanding any course of treatment used.

Of the 21 cases treated by me, four did not return after the first visit. Of the remaining 17, twelve were cured, and four were nearly well, or very much improved, when their visits were discontinued, and one died. This patient was a year old, in a state of great debility when first seen, and only under treatment 13 days. One of those entirely cured of the disease had several attacks of mercurial eczema, soon after one of which it died; but whether in consequence of that affection could not be told, as it seemed to be in no danger from such a result from that cause when last seen, which was a week or two before its death, and none of the attacks during which it was seen were sufficiently severe to afford apprehensions of such a termination.

The prognosis of this disease must be studied with reference to three distinct points:

1. The immediate danger;
2. The liability to relapses;
3. The ultimate health of the child:

and must depend principally on the nature and extent of the disease, the length of time before treatment, the mode of communication, and more especially on the constitution and diathesis of the patient, and the complication of other diseases.

When the disease is only local, and has been communicated during the passage of the child, the prognosis is favourable for two reasons: the local remedies will generally arrest the disease in the child before its system can become infected by it; whilst the recent date of the disease in the mother will not have afforded time for that degree of constitutional infection which would materially affect the general health of the child.

The child of scrofulous parents, especially if the mother has been enfeebled by the disease itself, or more especially by mercury taken injudiciously or immoderately for its cure, may come into the world without stamina sufficient to enable it to survive long enough to feel the effect of remedies; and indeed we know that it proves fatal to many before birth.

A cachectic state of the system from any cause will, of course, increase the chances against recovery; and the occurrence of the diseases incident to children, as the exanthemata, hooping-cough, irritation and inflammation of the stomach and bowels, dentition, worms, &c. &c. renders the prognosis more serious.

The very early appearance of the disease after birth would not of itself render the prognosis much, if any, more unfavourable, unless the constitution had suffered severely from the virus;

as it does not usually make such rapid progress that the delay of two or three weeks, if improved by palliative treatment, will compromise the safety of the child.

Some symptoms are dangerous independently of any complication; as 1. *Chancres on the lips*, which may prevent sucking, and also, by extending to the throat, prevent deglutition; 2. *Coryza*, which may obstruct respiration, or render it very difficult; 3. *Œdema*, which sometimes follows the suppression of certain mucous discharges; 4. *Opthalmia*, if neglected, though generally mild, and easily managed when properly treated at first; 5. *Phlegmonous tumours* are sometimes dangerous, though not always fatal. At the same time, therefore, that some symptoms apparently trifling may prove fatal, others which seem formidable, and have indeed been pronounced *incurable*, yield to remedies with comparative ease and certainty.

The *treatment* of infantile syphilis requires the consideration of several distinct points, and may be first studied under the two general heads of

I. Preventive.

II. Curative.

Under the head of *preventive* treatment, we have again to study it in different points of view:

1. As to the means necessary to destroy the liability of the offspring to the disease in the case of infection of one or both parents prior to conception;

2. To secure the child from disease when one or both parents become infected during the period of utero-gestation, or when secondary symptoms of an old infection become manifest during this period;

3. To protect the child from contamination, when the mother has sores on her genitals at the time of its birth.

A still greater number of circumstances must be kept in view under the head of *curative* means.

1. The mode of communication;

a. Whether *hereditary*, the symptoms appearing at or very soon after birth;

b. Whether *local* only, and communicated either at the time of birth, or by direct contact of matter afterwards, either from the breast of the nurse, or in any other of the different ways which have been mentioned.

2. The age and constitution of the child, which must modify both the form of mercury used, and the doses, and the auxiliaries to be employed at the same time ;

3. Its relation to its mother or a nurse ; whether

a. Still nursing ; or

b Weaned.

4. The form and seat of the disease, requiring corresponding modifications in the nature and mode of application of the local remedies.

The course of treatment necessary to secure the child from infection, when either, or both parents, have had the disease before conception, is such an one as shall be the most effectual, and at the same time safe way, of removing from the system the infection of syphilis. Its consideration might be made to involve the much disputed point as to the use of mercury in the cure of this disease. Upon the discussion of this, however, I have no design to enter, and will only remark, that, for the removal of this form of the disease, the weight of authority is decidedly in favour of a moderate and long continued alterative mercurial course, to be administered under the same regulations, and with the same minute and careful attention to all the varying shades of different cases, circumstances, and constitutions, and for at least an equal period of time, as is required for the treatment of secondary symptoms in ordinary cases. Nor do I think it necessary even to enumerate the different forms of this mineral which may be used, and much less to detail the numerous particulars into which even a superficial notice of the subject would lead me.

How far the exhibition of mercury promises protection to the offspring of infected parents, is a question of considerable practical interest, and one which I have seen no attempts to settle. The result of my cases would seem at least to justify the assertion that it frequently fails. In 11 of the cases of constitutional disease of which I have notes, mercury had been given to one or both parents, at different periods previous to the birth of the children, and during various periods of time, and in every instance, so as to affect the gums for a longer or shorter time.

In one of these cases, it was given to the father alone, for a sore on the penis four years before his marriage ; his gums were affected by it two or three weeks, so much so, he said, that his teeth were loose. Neither he nor his wife ever had any secondary symptoms ; their child was born at seven months, and had decided marks of infection.

In another case, the father had the disease seven years previous, and communicated it to his wife. He was under treatment during three months, and his gums were very sore seven weeks. About the same time, his wife also took mercury, and said that her gums were very sore six weeks. He never had any secondary symptoms, and she had none but nocturnal pains. They had had three children previous to the one which was then brought for treatment, two of which had marks of the disease, one at three weeks, and the other at five weeks of age, both of which were cured ; the third was entirely free from eruption.

In the third case, both parents had sores about two and a half years before ; the father was under treatment, but the nature and duration of it were not known. The mother took pills, and her gums were very sore about a month. She never had any other secondary symptoms than nocturnal and rheumatic pains. She had one abortion at the third month, and afterwards gave birth to an infected child.

In the fourth case, the mother received the infection from her husband two years and eight months before, took pills two or three months, during all which time her gums were tender, and during two or three weeks of the time, quite sore. Still, she had one infected child which died, before the one which was brought for treatment.

In the fifth case, nine years had elapsed since the primary disease. The mother suffered from a sore throat at that time three months, and had her gums sore by mercury three or four weeks; she had no other secondary symptom. Her child was feeble during 12 months, but had no eruption, or other evident marks of disease, (according to her account,) until it was 13 months old, one month after which, it first came under my care, when it had very decided symptoms of contamination.

In the next case, the mother was diseased two and a half years before; her gums were sore six weeks during her first pregnancy. She had exhibited no other symptom of infection since, except an eruption on the leg, but had been delivered of one dead child at the full period which was covered with eruption, besides the diseased one which was the subject of treatment.

In the seventh case, the mother had been married two and a half years, and had primary sores about three months after her marriage. She was sick about six months, and took a great deal of medicine, and her mouth was sore several different times, for a week each time; there was a scar of a chancre on the inner edge of the left labium. She never had any secondary symptom. Her first child was still-born, and her second, the one which she presented for treatment.

In the eighth case, the mother was infected about five years before, was under treatment, and her gums kept sore about a month. She had lost one child at five months, before seen with the infected one which was treated.

In another case, the mother was under the influence of mercury a fortnight, and in still another, the mouth was kept sore five or six days during her pregnancy, while at Bellevue Hospital.

The remaining case, is the one detailed at the close of this paper, in which the bi-chloride of mercury was taken 13 or 14 days, during the latter part of which time the gums became very sore. I would here remark, that this is the only case in which I administered the remedy myself, so that, for the history of its exhibition and its effects in other cases, I had to depend on accounts received from others.

The discussion of the second head of preventive treatment, the course to be pursued when the infection to which the child is exposed is imbibed during the period of gestation, involves the question of the propriety of administering mercury to a pregnant woman; a point on which opposite opinions have been, and are still maintained. It may be considered, however, as now well established, that with the precautions rendered necessary by that situation as to the form used, the doses, intervals, &c., it may be done with perfect safety; while numerous facts prove that it cannot be neglected with impunity. We must remember that this course has the double advantage of curing the mother and of preventing the developement of the disease in her offspring, while its omission compromises the future health of both, and perhaps the life of the infant, or may doom it to a miserable and enfeebled existence; and if deferred until after the birth of the child, may allow the disease to make such progress in the mother as to commit great ravages, and perhaps cause permanent deformity, as well as to communicate a confirmed constitutional taint.

Medical testimony seems to be very decided on this point. Bertin thinks that when abortion takes place during such treatment, it is more frequently owing to the disease than to the remedy, and that it occurred in a greater proportion of cases where there was no treatment.* Swediaur says that if its exhibition does expose to abortion, the risk is more than counterbalanced by the chances of serious and perhaps fatal consequences of its neglect both to the mother and child. Ricord has seen more females miscarry when their disease has been suffered to go on unchecked, than when they have been subjected to a judicious and appropriate anti-syphilitic treatment. The testimony of Lagneau is to the same effect. But it is needless to multiply authorities on a point of practice which may now be considered as so well established. When the period has advanced, however, as far as the eighth month, this course must be postponed until after delivery, and a palliative treatment substituted. At no period, however late, should the cure of the sores on the genitals be postponed, on account of the danger both to the child and to the practitioner during labour.

Different modes of administering mercury to pregnant women have been preferred by different practioners, some using it externally by frictions, and others exhibiting some of its various forms internally. Bertin gave the preference to frictions, though he acknowledges that they should be used with caution, on account of their liability to produce speedy salivation. Swediaur, on the other hand, was much opposed to them in these cases, contending, and I should think, with good reason, that few in that situation are able to undergo the inconvenience and fatigue of them. Certain conditions of the system, and certain circumstances, may make them preferable to the internal use of the remedy, as when there is any tendency to affection of the chest, when the stomach is irritable, or when there is great nervous excitability of the system. It need hardly be added, that no single and uniform course can be selected to suit the varying cases which may occur, but that the form of the remedy and its mode of administration must be adapted to the different circumstances which may present themselves, and that, whatever course is adopted, it should be conducted with the greatest caution, and with the most careful watching of the effects of the remedy on the system, especially on the nervous system, on the stomach and bowels, and on the salivary glands, suspending the remedy when vomiting or diarrhœa occurs, or when the system begins to show its constitutional influence. It is sometimes necessary to premise the treatment with remedies to regulate the gastric and intestinal functions. The internal remedies more commonly selected are the bi-chloride, in pill, or dissolved either in alcohol or water, blue pill, and by some French practitioners, pills of mercurial ointment; also calomel, either with or without opiates. These should always be given, in smaller doses than under different circumstances.

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* He remarked, that when it takes place during treatment, "it depends sometimes on the progress of the disease, treated badly, or too late; or the cachectic or feeble state of the mother; or privations of different kinds; or on excesses during the period of pregnancy."

Rayer thinks that a pregnant woman, after having been cured of primary symptoms, ought to be put under a mercurial course as a protection against constitutional infection, even if no symptoms of it are present.*

In the treatment of a pregnant woman, regard must also be had to her constitution, temperament, &c., whether she be feeble, or of a lymphatic temperament, of scrofulous diathesis, of nervous and irritable habit, has had many children, &c.; or whether she be young, plethoric, in full health, with her first child, &c. In the former case, nourishing diet, tonics, &c., must be given. Mercury was first given to pregnant women in the hospitals of Paris in 1650.

Lagneau says that warm bathing should be only moderately used, both as preparative, and during the treatment. Two or three baths, he says, are generally enough before commencing it, and that more may do harm and expose to abortion. He says that the too frequent and indiscriminate use of hot baths, both before, and during mercurial treatment in pregnancy, has been often found to give rise to this; the number and temperature of the baths should both be attended to. He advises only three or four as preparatory, and none during treatment. Swediaur also speaks of the necessity of the same precaution and for the same reason. Bertin, however, says that he prescribes them with impunity, by avoiding too great excitement by them, and their too long continuance, and also by allowing a certain interval between each bath.

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* He recommends for this purpose pills of mercurial ointment and Tisane de Feltz.

The third branch of preventive treatment has reference to the protection of the child from the infection of sores on the genitals of its mother, and is perfectly simple in its nature and application.

It embraces both the means to be used immediately preceding birth, and those necessary immediately after. Under the first head belong

1. Cauterization of the chancres, when any exist; or
2. Covering them freely with fatty matter to prevent contamination mechanically.

Immediately after birth, particular care should be exercised in washing the child, and in removing any adherent matter of any kind, and in watching it critically at least eight or ten days, to discern the least morbid change in any respect.

The change effected by delivery in both mother and child gives rise to a corresponding modification of treatment with respect to both.

Three modes of treating hereditary syphilis present themselves, each possessing advantages entitling it to the preference in certain cases, and each exclusively having had, and still retaining, its advocates. These are,

1. The *indirect*, through the milk of the mother or nurse;
2. The *direct*, by remedies given to the child alone; and
3. The *mixed*, in which remedies are administered to both mother and child at the same time.

A necessary addition to either of these courses will be the *local* treatment, which must vary with the form, seat, and character of the local disease.

The plan of treating the diseases of nursing infants through the medium of their food is as old as Hippocrates, and, while it suggests itself at once as the most natural one, is the method which seems to unite the testimony of the greater part of those who have particularly directed their attention to this branch of practice; still, experience has proved that it is not always the most advisable, and circumstances will also suggest themselves at once, under which it would not be practicable. Cases not unfrequently occur, in which it seems absolutely necessary to give mercury directly to the child, at the same time that its use to the mother is continued. The case under my care mentioned under the head of *mixed* treatment, certainly arrants such an assertion, and likewise one related by Colles, who remarks also, in another place, that he has seen a "good many" cases in which the child appeared to be growing worse until the direct exhibition of this remedy. When both mother and child are infected, mercury should of course be given to the mother, unless contra-indicated by other symptoms; but when the mother is healthy, and never had primary symptoms, it would seem better to give the child the advantage of fresh, uncontaminated milk, and to administer the remedy to the child alone. This is the course which I have pursued in the greater part of the cases under my care.

When secondary symptoms appear in the child at birth, from 10 to 15 or 20 days must be suffered to elapse, with the ordinary attention required at that period, before the use of mercury can prudently be entered on; after which, the system may be prepared for its exhibition by laxatives, diluents, warm baths, &c. As the majority of the cases, however, which become the subjects of treatment do not occur until after a period still longer than this, delay is seldom experienced on this account.

Different modes of *indirect* treatment have had their advocates, some, as in other cases, preferring the use of mercury externally, and others its administration internally. Into the particulars of either mode, we need not enter, nor into their comparative merits, only remarking that the latter course seems to be the one in more general use. The best rule is, probably, to treat the nurse as you would a patient with secondary symptoms following sores contracted by impure connection, that is, with small rather than with large doses of mercury; and the form selected may be any one of those in ordinary use for that purpose. Among these, and probably at the head of the list, may be placed the bi-chloride, commencing with doses of one-eighth of a grain, or even less, and not exceeding one-quarter, three times a day, in some mucilaginous drink, either with or without sarsaparilla, which is the form particularly suited to inveterate cases, when there is no contra-indication in the state of the constitution; also the proto-ioduret of mercury, which seems to be preferred by some of the late French writers. Blue pill, pills of mercurial ointment, small doses of calomel, &c., are preferred by different practitioners, and are doubtless sometimes better adapted to particular cases. Mercurial frictions are still preferred by some, and may be rendered preferable by circumstances.

When the child has no nurse, or has been weaned, or the nurse has sores on her breast, a modification of the indirect treatment proposed and practised by Levret, is the milk of a goat or an ass, medicated by mercurial frictions to the animal.

The *direct* mode of treatment is the most simple in its nature, equally certain in its results, and sometimes the only one advisable, or perhaps practicable.

A prejudice against this mode of exhibiting mercury to infants long prevailed, and still remains in considerable force, founded on misapprehension as to their ability to bear what is considered so active and so irritating a remedy. Gibert thinks that it should not be given to young infants until after an ineffectual trial of other means, both general and local; and this is the opinion of many others at the present day, as it was formerly of a still greater number. The highest medical authority on such a point, however, unites with the testimony of numerous recorded cases, which is confirmed by daily experience, in proving that this prejudice is unjust. Hey says, that they will bear doses of it, without apparent disturbance, which would affect adults. Lagneau, speaking of the bi-chloride says, that children bear this remedy well, in consequence of the abundance of mucus in the stomach at that age, which prevents its causing irritation, and that the same is true of females and those of lymphatic temperament. Swediaur also speaks of the astonishing ease with which the majority of infants bear the treatment by this article, and Bertin says that its bad effects on infants have been overrated, and that they support it better than adults.

My own experience confirms me in the same opinion with respect to the milder preparations of this remedy, which I have been in the habit of using.

In the selection of the mode of administering mercury *directly* to infants, we find that opinions were formerly divided, and are somewhat so still, as to the advantages of its external over its internal use, and equally well known names may be quoted in favour of each. Bacot recommends rubbing the strong mercurial ointment, 10 grains at a time, into the soles of the feet, until a cure is effected. Bertin, however, whose experience was founded on the treatment of nearly 900 cases in the course of nine years, nearly abandoned frictions for other means, and Lagneau thought the internal remedy preferable. When used, from four to twelve grains of ointment may be rubbed in every two days.

Among the forms of mercury in more common use, may be mentioned calomel, given with sugar, or with prepared chalk, in doses of one-quarter to half a grain, two to three times a day; or with small doses of rhubarb, as was sometimes ordered by Bertin, and may be of service when there is derangement of the stomach or bowels; also hydargyrum cum creta, in doses of two to four grains, which is the form I have been most in the habit of using. Also, some of the other mild preparations of mercury, analogous in their character and mode of operation, as blue pill, which may be given in doses of two grains, either in syrup, or suspended in mucilage, or in a mixture of rose-water and syrup; or some of the preparations of crude mercury rubbed up with gum arabic, candy, or white sugar, and administered in different ways.

Another form of mercury which has been preferred by many, and to which I have already alluded, as one which infants and children bear with great ease, is the bi-chloride, which may be given in doses of one-twenty-fourth to one-twelfth, and sometimes increased to one-eighth, and even to one-sixth, according to the age of the child and its effects on the system—administered in some mucilaginous or sweetened vehicle. Bertin preferred this form, and says its effects were the most prompt of any he had used, particularly for the pustular form of the disease, but he thought that it leaves the patient more exposed to relapses. Swediaur and Bacot, however, both object to its use.

Another form of mercury of more recent introduction, and in common use in Paris, is the proto-ioduret, which is recommended by Gibert in doses of one-eighth to one-fourth of a grain, according to the age of the patient. Of its use in infants for this purpose, I cannot speak from personal experience.

Another way of using mercury recommended by Dendy, in his late work on Diseases of the Skin, but which seems to me of questionable utility, is in baths, made by dissolving the bi-chloride in water (ʒ ij. to ʒiv. to xxx gallons of water.)

Some practitioners advise the use of sarsaparilla, guaiacum, &c., either in syrup or decoction, in combination with these different forms of mercurial remedies.

When the bowels are too freely acted on by any of these forms of medicine, minute doses of laudanum or of Dover's powder may be given to counteract this effect. The warm bath will be found a valuable auxiliary to every mode of treatment, as will also particular attention to hygiene. Sufficient clothing, with great cleanliness, pure air, and nutritious diet, with aromatics, and sometimes tonics, will frequently assist materially in the cure, and should always be ordered in children of feeble constitutions, and especially in those of scrofulous diathesis.

The direct mode of treatment will be the one sometimes rendered necessary in young infants by the want of a proper nurse, or the difficulty in obtaining one, and the one always required in children that are weaned, and those of different ages beyond that period. There are cases also, in which it will be necessary to wean the child for the purpose of cutting off the supply of infection, and to such cases the direct mode is the only one applied. Blundell speaks of a case of this kind mentioned to him by another physician, in which the disease, in an infant apparently syphilitic, returned after having been twice cured by mercury. Suspecting infection on the part of the mother, he had the child weaned, when a permanent cure was effected.

The same forms of mercury may be used after the child is weaned, in doses proportioned to the age and strength of the child, and other qualifying circumstances. To a child one to three years old, one-twelfth of a grain of the bi-chloride daily, in some mucilaginous vehicle—three to five years, one-eighth of a grain may be given, and so increase to one-sixth and one-fourth, as the patient approaches puberty, (Lagneau.) The doses of the other preparations of mercury must be regulated so as to give to a child two to three years old, a grain of mercury daily; to a child four to five years old, one and a half grains; to one six to seven years old, two grains, and then increasing by half a grain every year, until five or six grains are taken, as in adults. One or the other of these courses should be continued two months. It is frequently necessary to give tonics at the same time.

The *mixed* plan of treatment, as it has been called, consists in the administration of mercury to both nurse and child at the same time. I have already alluded to the insufficiency of the indirect treatment alone in many cases. The following will afford an instance of this, and also of the good effect of direct means. A seven month's child, born of scrofulous parents, was brought to the Dispensary when five months old, apparently in the last stage of emaciation and debility, with a dirty hue, and a countenance like that of premature old age, with its chin, under lip, and sides of the face covered with venereal ulceration, and with severe inflammation of both eyes with purulent discharge. The mother had received the infection from her husband, and the disease had first appeared on the child at two months of age. It first manifested itself within the mouth, and about a week afterwards, about the anus — the neighbourhood of which, the nates and upper part of the thighs bore the marks of disease which had healed; the child was nursing; its bowels were very costive. The health of the mother was apparently good, her tongue clean, appetite very good, but bowels quite costive. She was immediately ordered five grains of blue pill, three times a day, and to keep the child's bowels free with rhubarb and magnesia. After ten days, pursuing this course regularly, the child remained the same; the mother's mouth was not affected. She was ordered to continue the same treatment, and to give the child one grain of calomel in two grains of prepared chalk, morning and evening, and to wash the sores with warm water and castile soap. Six days afterwards, the child was better, having taken 10 grains of calomel; the same powders were again ordered, with the application of dilute citrine ointment to the chin and face. At the end of three days more, (nine days in the whole,) the child was much better in every respect; the eyes were nearly well, and the eruption on the cheek, &c. was healing. The same course was continued, and when seen at the end of 21 days from the time of commencing the use of the calomel, the child was entirely free from local disease; the sores were every where healed, and the eyes had been noted as entirely well seven days before. It had taken its powders quite regularly, having only missed a few times. The mother continued the use of the blue pill, almost always taking three, and always two daily, for 44 days, without the least effect on her mouth; her tongue was clean, her bowels were generally costive during this period, sometimes not open for three days. During the last two days of this period and two days after, they were open once daily. This child continued very feeble for a long time, suffering from a cough, and gaining but little flesh. Fifteen months afterwards, it was brought to the Dispensary with a venereal sore at the right angle of the mouth, which the mother said had been there four or five months, and for which it was ordered some mild citrine ointment. Nearly a month afterwards, it was again brought with the same sore, which had nearly healed up, and had broken out again; its bowels were then much deranged, stools frequent, and of unnatural colour, &c., and the right eye was inflamed and swollen. It was ordered five grains hydr. cum creta, morning and night, for two days, and the same ointment as before, and when brought six days after, the sores were better, and eye nearly well. It was then not seen again for more than a month, when the sore had not healed entirely, though nearly so. The child was then very much emaciated, very feeble, and its skin of a dirty hue; its abdomen was swollen, and sometimes painful to the touch. Five months after, it was free from any eruption, but had a bad cough, and was wasting away, its skin was still very sallow, its bowels loose, appetite voracious, &c. The sore at the corner of the mouth afterwards appeared again, and was again cured. He was seen again when about four years old, when he was suffering under a scrofulous affection of the spine, with inability to support himself, and was very remarkably improved by the use of the hydriodate of potash, which was repeated, but the child was not again brought to me. The father had died of tubercular phthisis in the mean time.

This case affords an instance of hereditary transmission; of the ordinary form in which the constitutional affection shows itself; of speedy improvement under the use of direct treatment, when not effected by the indirect; of the large doses of mercury which can be taken, not only without injury, but with decided benefit; and of the great tendency to the re-appearance of the symptoms; and is also interesting from the great quantity of mercury taken by the mother at the time she was nursing the child, without any decided effect of any kind, either on her general health, her bowels, or her salivary glands.

Local applications are frequently required, in addition to the general means used, and must derive their character and form from the nature, seat, and state of the local affections of different parts. Ulcers on different parts, and flat tubercles about the anus of children, are slow in healing, and require the use of such means.

Frequent ablution with warm water is always to be strictly enjoined, in addition to the use of the warm bath every day, already alluded to, both as a matter of cleanliness, and to prevent the disease from extending by the infection of neighbouring parts by contact of matter. Emollient washes or narcotic fomentations, as of hops, conium, &c., may be substituted for this, when the parts are tender and inflamed.

Black wash is one of the best as well as most convenient lotions for the ulcers in their most usual, or uninflamed state, and also for flat tubercles about the anus. A great variety of ointments may be used for these purposes, which it is not worth while even to enumerate. That of white precipitate (grs. xij. to ℥j. lard with eight drops of laudanum,) or calomel (grs. xv to ℥j. opiated cerate,) or of the proto-ioduret of mercury, (x to xx grs. to ℥j. lard,) will be found to answer a good purpose. Citrine ointment diluted with an equal quantity of lard, is quite effectual, and the one which I have most frequently used. A solution of corrosive sublimate in water, with laudanum, is recommended as a wash for ulcers on the labia. Cauterization with nitrate of silver is advised for ulcers at the commissures of the lips, but I have no practical acquaintance with its use for this purpose.

There are some peculiarities in the treatment of this disease in infants not met with in adults:

1. There is no danger of causing salivation, a point now too well known to require any remark;

2. The symptoms disappear much more rapidly than in adults under the influence of proper treatment;

3. They are more liable to relapses, and these occur at particular periods, or under the influence of certain exciting causes, as at the time of weaning, of first dentition, &c.

4. They bear comparatively large doses of mercury with impunity.

Whatever the course of treatment pursued, and whether by the *direct* or *indirect* method, the effects of the mercury on both mother and child should be narrowly watched, and the first dawnings of any unfavourable symptoms detected, if possible. This is particularly true as regards the child, on whom this article not unfrequently produces unfavourable, and sometimes fatal effects. It was noticed by Doublet and Faguer at Vaugirard, that if frictions were used for nursing women too freely, the infant experienced considerable uneasiness, colics, diarrhœa; and Bertin's subsequent experience at that institution confirmed their observation.

Among the most prominent of the injurious effects of mercury may be mentioned,

1. *General uneasiness, restlessness, and colicky pains* — an effect, as already mentioned, long ago noticed when it was given too freely to nursing women;

2. *Diarrhœa*, which should always be guarded against, especially when the child is much reduced, and of a cachectic habit;

3. *Convulsions*, which not unfrequently destroy the child, especially when their cause is not recognised, and the use of mercury is continued. Colles lost one patient "on the second day of visible amendment," which he was treating with frictions of mercurial ointment; "the child was seized with a convulsive fit, in which it expired." He ascribed the death "to the first impulse of mercury upon a highly sensitive system," for he could find no other probable cause for it. This symptom occurred in two of the cases under my care, in one of which the infant suffered with convulsions, at intervals, for two days, after having been for some time previous restless, and with a hot skin, &c. One of the cases treated by a friend of mine, died apparently from this cause on the fifth day of treatment, and when improving very rapidly under it.

4. *Mercurial eczema ;* this is probably very rarely met with in infants. Colles never saw a case. It occurred in one of my cases.

When any of these symptoms occur, the medicine must of course be suspended, and its use only resumed after all irritation from these sources shall have subsided spontaneously, as it will generally do on the withdrawal of the cause ; or until it shall have been allayed by the proper means. These consist principally of mild laxatives, fomentations with warm water, or with narcotic decoctions, warm baths, and opiates. When there is much irritability of the bowels, especially if accompanied with pain, a small proportion of Dover's powder may be advantageously combined with the mercurial when it is administered directly to the child.

Duration of treatment.—It is difficult to fix upon the precise period of treatment necessary to afford complete immunity from all danger of relapse in constitutional syphilis in infants. Facts prove that certain symptoms are very apt to return after an insufficient treatment in either of the ways mentioned. The irregularity in the attendance of the greater part of my patients, and the constant disposition shown to discontinue visits before the cure was complete, added to the almost impossibility in these cases, (and in children of larger growth, too,) of having the plan of treatment persevered in after an *apparent* cure has taken place, unite in preventing me from offering anything very positive from my own experience on this branch of the subject. In one of my cases, with eruption about the chin and neck, and flat tubercles about the anus, and discharge from the nose and eyes, every symptom had disappeared at the end of 13 days of regular treatment ; and there was no relapse five and a half months afterwards, when the child was last seen.

In another case, in which there had been an eruption on the legs and about the groins, and in which there were flat tubercles about the anus when seen, these were gone at the end of 15 days ; there was a return of one flat tubercle at the end of three weeks from neglect of treatment ; this child was well two and a half years afterwards, and had been so since the treatment.

In two other cases, the infants were both well on the 17th day ; one having had the eruption on the chin, arms, legs, and nates; the other on the nates, back part of the thighs, scrotum, and right leg, and also some on the chin, face, and back of neck, with great snuffling, and a dirty hue of the skin; the former of these patients afterwards had mercurial eczema.

In another case, in which the eruption, when seen, was on the inside of the legs, anus and thighs, with brownish discolouration of the forehead, and also snuffling and slight inflammation of the eye, the eruption disappeared in 14 days, and the discolouration of the forehead in 27 days; but there were still slight remains of the disease at the end of six weeks, when it was last seen.

In another case, with the eruption very abundant, some spots with scales, and others without them, with brownish discolouration on forehead, and great snuffling, the child was improving fast when, at the end of 11 days, it was attacked with measles. A month afterwards, it was entirely free from all the symptoms, except the discolouration of the forehead, of which all traces had not disappeared until the end of two months.

In another case, with brownish spots, discolouration of face and forehead, flat tubercles about the anus, congestion of mucous membrane of the nostrils, and appearance of premature decrepitude, every symptom was gone on the 21st day, and the child was then gaining flesh.

In a very severe case already mentioned under the head of *mixed* treatment, the child was free from local disease in 21 days, but afterwards had several relapses, and suffered from an enfeebled constitution, &c.

In another case, in which symptoms had reappeared at the age of 12 months, (when I first saw it,) these were all gone in 19 days, and the child was in good health when last seen, two months afterwards.

I have already stated the results furnished by my cases as to the length of time which the mercurial treatment had been continued without affording protection against the constitutional infection of the child.

Bertin relates one case of infection received from a strange child, and communicated to her own, in which the mother exhibited no symptom whatever of the disease. The mother was under the use of the Liq. of Van Swieten, and of frictions of mercurial ointment every four days during four months, while nursing her infant, when both mother and child left the hospital apparently well. At the end of three months, however, and at the period of first dentition, venereal pustules appeared about the anus of the child. These yielded to the internal use of the bi-chloride of mercury as before, with the local application of mercurial ointment, after which the child enjoyed good health.

In another case by Bertin, a woman was under the use of Liq. of Van Swieten two and a half months, and after an interval of 15 days, took it three weeks longer, and still gave birth to an infected child. She had a chancre on the right external labium, and ulcers on the tonsils. Her husband had had a violent gonorrhœa five years before, which had been neglected, and which was followed by a chancrous sore at the anus.

Gibert says that a cure of the hereditary form takes place from the third to the sixth month. Lagneau also gives the same limits, and says that after that, the infant may be nursed as though nothing had happened.

The duration of the *mixed* treatment should be nearly a month, according to Lagneau, if there is no reason to the contrary; discontinuing it, if any teeth cause irritation, and resuming it when that subsides. He says that two or three grains of the bi-chloride are generally enough for the infant, when the nurse is also taking mercury.

The duration of the treatment in pregnant women must vary somewhat according to circumstances. Lagneau says that it must be continued 40 to 60 days at least, and in case of very old infection, beyond three or four months; especially, as the doses given must be smaller than under ordinary circumstances, and hence the requisite quantity must be made up by length of time.

The duration of treatment in cases of children that have been weaned, and of those older, should be two months.

The following group of cases, in which the infection, first communicated by direct contact, after giving rise to secondary symptoms, was transmitted hereditarily; and in that form exhibited its effects in the birth of one dead child, and of two others in which the disease manifested itself soon after birth, and in which the infection was again propagated to its nurse, by direct contact by one of these children, with the treatment pursued in all, will illustrate almost all the leading peculiarities of this interesting form of disease, and I trust no other apology will be necessary for entering somewhat into the details of its different branches.

A child, 16 weeks old, was brought to the Dispensary March 23, 1836. It had been nursed by its mother, principally, but not entirely, during the first three weeks after its birth; her milk then failed, and the child was given in charge to the nurse who had still the care of it. About 12 or 13 days after the nurse took it, an eruption appeared about its lips, which extended towards its eyes, and afterwards over the whole body. Previous to this, it appeared healthy, and was free from eruption. For this it was under treatment, until eight or nine days before brought to Dispensary, but with little or no benefit, the remedies seeming to have been mostly, if not wholly, directed to the removal of gastric and intestinal derangement. When first seen, it was worse than it had been; the surface of the chin was wholly covered with large superficial ulcers, which also extended somewhat under the neck; there were copper-coloured (or rather brownish) spots on the arms and the legs, none on the body; the lower part of the back and the nates were covered with circular ulcers, about the size of a shilling piece, superficial, and with elevated edges, and the whole much inflamed. There was congestion of the mucous membrane of the nose, producing constant snuffling. The child was considerably emaciated, and of a general cachectic appearance; bowels had lately been loose, stools green and very slimy; tongue thinly coated white; was very restless at night; nursed entirely.

On examination, I found that its mother took a child to nurse just three years before, which had an eruption on its face and body, (she says just like this,) which child died with the disease in about a month; her left breast and nipple (the only one with which she nursed) were sore two days before the child died, and this increased till the whole breast was covered with sores. Two months after this, an eruption appeared on the chest and arms, and about the anus; and about the same time, sore throat. She then applied to the Dispensary, and after taking sarsaparilla and using black wash locally, the eruption disappeared; her mouth had never been made sore. From that time, she had never been well, but had suffered from severe and constant pains in her head, chest, and limbs; had had no eruption since.

About two years before I saw her, she was married a second time, and at the end of nine months, gave birth to a still-born child, which her physician told her was destroyed by the disease. She was soon pregnant again, and within the same year, (between three and four months before I saw her,) was delivered of the child whose history and symptoms have just been detailed. She denies ever having had any sores about the genitals, and that her husband ever had any. Her left nipple is somewhat larger than the right, and of a dull red, or coppery tinge, and bears the mark of an old ulcer — and there is every reason to give credit to her account.

About three weeks previous to her first visit to the Dispensary, the nurse first noticed a sore on her right breast, and only two or three days previous, saw some also on her left breast. She had, when seen, an oblong, superficial sore, about half an inch in length and a quarter of an inch broad, covered with a thin, yellowish scab, with elevated and indurated edges, on the right breast, on the outside of the nipple, and two or three smaller ones of a similar character, on the same breast; and also four or five of the same nature on the left breast, surrounding the nipple, and about an inch from it. She was a perfectly healthy woman, of strong constitution, of rather full habit, and of florid complexion.

The treatment of the mother, child, and nurse, was immediately commenced.

For the child was ordered, five grains of hydr. c. creta, morning and evening; the sores to be washed three times daily with warm water and Castile soap. After taking two powders, the child slept better than it had done for a long time; and at the end of three days, the sores were evidently improving. The same means were continued, with the warm bath at evening. At the end of two days more, the sores were improving everywhere, and the eruption fading on different parts, but the child was restless, and had a hot skin, and its tongue thickly coated of a dirty white colour; there were two or three stools daily. The same powders were continued, with the warm bath every other night, with directions to omit the powder at evening, and give a teaspoonful of castor oil, if the child should be restless. Five days after, calling at the house to see the child, I found that, on the evening of its last visit to the Dispensary, soon after taking the oil ordered, it was seized with convulsions, which it was said, continued more or less, at intervals, for about two days. It had taken no powders since attacked in that way, and had not been bathed; it had then recovered from them entirely, and was sleeping quietly. It had improved very much; the chin was almost entirely well, the sores on, or about, the nates were much better, and the spots on the legs and arms were all gone. Nothing had been applied to the sores but sweet oil, which had been previously ordered: its bowels were then regular; all medicine was discontinued, and a warm bath ordered. (The nurse was at this time under the full influence of mercury, and the child had nursed regularly, with the exception of the evening of this attack of convulsions.) At the end of nine days more, (19 days from the beginning of the treatment,) during which period the child had taken nothing but milk from the nurse, (who was all the time under the use of mercury,) it was entirely well; the sores had everywhere healed, and nothing was left but the discolouration; there was still great emaciation. No medicine was ordered. Improvement in strength, flesh, and colour gradually progressed from this time, the child continuing to nurse, and to be bathed two or three times a week, until the end of 19 days more, when it was brought to the Dispensary with a fine eruption, evidently vesicular, covering the nates and upper part of the thighs, the whole of which were of a uniformly dark red colour. A few patches of the same eruption was seen also on the face, and about the chin, and a large one on the back of the neck—none on the body, arms, or legs. The nurse first perceived it two days before, and it had increased very much since; the child had been fretful and feverish for a few days; the tongue was thickly coated. At this time, the nurse was well, and her mouth not sore. Five grains of hydr. c. creta, morning and evening, were ordered, and the warm bath at evening. The next day the eruption had faded considerably, the surfaces affected presenting in many places the remains of vesicles; the tongue was still thickly coated; there had been vomiting, and several bad looking stools after one of the powders; the same means were continued, and on the fourth day, the parts which were the seat of the eruption, (that is, the nates, thighs, and back of the neck,) and nearly the whole of the legs and arms were of a very deep red colour, without any elevation; the tongue was less furred; the child did not seem to suffer. It was then ordered four powders, each containing one grain of calomel and two of rhubarb, one to be taken every night, and to be bathed in warm water. Five days after, the eruption seemed rather extending, and the tongue being thickly coated white, it was again ordered five grains of hydr. c. creta, night and morning. Two days after, the nates, thighs, legs, arms, and back of neck and shoulders, were of a dark red colour, and were scattered over with very small scales like the remains of vesicles; there were none on the back, breast, or abdomen. Mercurial remedies were now discontinued, and she was ordered a teaspoonful, three times a day, of a mixture containing rhubarb and soda, of each ʒss. and ipecac one grain; water ℥ij.; and the parts affected to be washed with decoction of hops. In three days, the child was much better, and in two days more, the eruption and redness were both nearly gone, and the skin was everywhere assuming a natural appearance. A week after, there was again some redness in these parts, with some remains of vesicles; but at the end of a fortnight more, the skin was entirely free from eruption of every kind, though still unnaturally red, and the child appeared healthy, and was gaining flesh; its bowels were regular; it had taken no medicine for a long time, except the mixture of rhubarb and soda at times, to regulate the bowels. After this, the child was seen occasionally, though not regularly, and once or twice had the parts formerly affected of a bright red colour, which declined and then reappeared; and when last seen, was still suffering from it, though in other respects apparently doing well. A week or two after this, however, I understood that the child died, without medical attendance, and, so far I could learn, without sufficient cause.

The mother was ordered the bi-chloride of mercury in doses of one-eighth of a grain, three times daily, to be taken in half a tumbler of the comp. decoction of sarsaparilla. She took her medicine regularly, and at the end of ten days, was much better, and nearly free from pains. The same means were continued, but in the course of three or four days more, her mouth began to get sore, and soon became so much worse that she discontinued the medicine, when it got better. She was then ordered to continue the use of the comp. decoction of sarsaparilla alone, to which was added, a few days after, the sulphate of quinine in solution, in half grain doses three times daily. She now began to improve, and at the end of a week more, her mouth was well, her tongue nearly clean, and her appetite (which had been quite poor,) improved. This course was continued between two and three weeks longer, after which time she became very irregular in her attendance. She was heard of at the end of two and a half months from the time treatment was commenced, and was reported to be very well, and entirely free from pains.

The nurse was put immediately on the use of blue pill, of which she took five grains, three times daily. Her gums and breath began to be affected on the third day, when she was ordered one pill night and morning. Two days after, the soreness had diminished, and she again took three pills daily. In a day or two, her gums became quite sore, and she left off the pills for three or four days; the sores on the breast now began to heal, the largest having diminished in size about one third. After a laxative of castor oil, she resumed the use of the pills, taking two daily, and on the 19th day of treatment, the sores on both breasts had healed — the mouth was then quite sore, and the breath mercurial — no local application had been made to the sores, except simple cerate. She was then directed to take one pill every evening. On the 24th day of treatment, her gums were still sore, and the pills were discontinued. A week after, her mouth was still slightly sore, though she had taken no more mercury. On the 38th day after treatment was commenced, her mouth was entirely well, and she was free from every symptom of the disease. She was seen at intervals during the succeeding three and a half months, and continued entirely well. About a month after this, however, and nearly five months after she was apparently well, she returned to the Dispensary with a sore on the inside of the lower lip, about one inch in length, and one-third of an inch broad, with a whitish surface, and elevated borders; there were fissures at each angle of the mouth, lined with whitish false membrane, and the tonsils and posterior fauces were also covered with a thin whitish (or grayish) layer. She had severe nocturnal pains; her gums were somewhat tender, and the discharge of saliva greater than natural; her bowels were costive, her appetite bad, &c., and she complained of general debility. She had been in the country some weeks, and the sore on her lip was smaller than it had been. She was ordered a gargle of nitrate of silver (grs. vi. to ℥iv. water,) and a solution of quinine, and when seen 10 days after, was much improved; the sore on the lip had nearly healed; the strength and appetite were both better. The same remedies were repeated, and she discontinued her visits.

At the end of less than eleven months from the time when the child, whose case has just been detailed, was first seen, a second living child of the same mother was brought to me, then two weeks old; it was apparently healthy, and presented no morbid discolouration of the skin, and no other suspicious mark than a single small, circular spot, of a brownish, or reddish brown colour, covered with thin grayish scales near the umbilicus, and some erythema about the groins. Two small doses of hydr. c. creta were ordered, with a warm bath, and five days after, the erythema had diminished, the scaly spot remaining the same — no congestion of the mucous membrane of the nostrils was then noticed. At the end of 23 days more, it was again brought, when the surface of its body and limbs was mottled, and of a purplish hue — there were no distinct spots of eruption. The bowels were costive; stools greenish. It was ordered five grains hydr. c. creta every night, for four successive nights, and the warm bath every other night. It was not seen again for nearly two months, when it had a small brownish or coppery spot covered with fine scales, on the foot; health apparently good. No medicine was given, and a week after, it was again brought, and then had several dark red spots, almost perfectly circular, from two to four lines in diameter, and slightly elevated in the centre, about the upper part of the thighs. The warm bath only was ordered, and when seen at the end of another week, the number of these spots had increased very much, several had appeared about the groin, and one on each of the nates near their union, about four lines in diameter, perfectly circular, elevated, and of a dull red colour, and also several about the face; the old spots were assuming a brownish colour. The spot which first appeared on the foot was now about the size of a six cent piece. The general health was good; bowels inclined to be costive and griped at times; tongue thickly coated white; was only nursed by its mother a week or two, and then only partially; has been fed since. At this time it was vaccinated; small doses of rhubarb and magnesia were ordered to regulate the bowels. At the end of another week, the eruption was much more abundant, and very much inflamed; there were numerous spots on the thighs, legs, and feet; and the child was fretful and very restless. The point where the matter was inserted was somewhat red, and there was the appearance of an imperfect vesicle. He was now put on the use of hydr. c. creta, three or four grains night and morning, and in two days, was very much improved—he was playful, and slept better than he had for a long time — the old eruption was fading, and no new had appeared; the inflammation had also very much abated. The spot vaccinated was but slightly inflamed, and covered with the remains of a vesicle, appearing as though it had taken, but had been interrupted in its progress by the venereal virus. The same treatment was continued for five days more with rapid improvement, and then a powder was given only at night; and at the end of four days little was left of the old eruption but the discolouration, and there was only one new spot. The child was now noticed to snuffle very much, a symptom which had doubtless existed before, but had not been noted. He was then not seen for three weeks, at the end of which time there were two spots on the front part of the neck. Four powders of the hydr. c. creta were then given, but during the next seven or eight weeks, it was only able to take them at intervals, in consequence of irritability of the stomach and bowels. At the end of that time, after taking a mixture of rhubarb and soda for a few days, he was much better in general health, but there were several spots of eruption on different parts, and three or four flat tubercles about the anus. He was then ordered a teaspoonful three times a day of the following mixture: ℞ Hydr. mur. gr. j.; tinct. gentian, c. ʒij., aqu. f. ℥ij. Mix. and a warm bath every evening. After the use of this for 11 days, his general had much improved, and no new scaly spots had appeared; but there were two tubercular elevations, with tawny surfaces, about three-fourths of an inch long, directly in the fold of the integuments in the front part of the neck. The same solution was repeated, and dilute citrine ointment ordered for the tubercular elevations. The eruption entirely disappeared under this course in two or three weeks. A month after this, however, he was brought to me, when a few new spots, almost free from scales, had appeared about both knees, and nowhere else; the child was well and hearty, bowels regular, &c. He was ordered the muriate as before, and the warm bath. He remained free from the eruption till the end of nearly two months, when numerous spots appeared about the anus, followed very soon after by similar spots on the scrotum, thighs, &c., with considerable snuffling; his general health appeared good, and colour natural. Another grain of the muriate of mercury was ordered, in water, with a little bitter tincture (Columbo.) A week after, the eruption was entirely gone, except one spot which had got rubbed. The child was healthy and of good colour — was lively, and slept much better at night than formerly. The same quantity of the solution, containing one grain muriate of mercury, were ordered, and the child was not seen again, after a period of nearly a year after treatment was first commenced.

This group of cases illustrates, as has been remarked, several of the most interesting points of our subject:

1. The communication of the infection by the infant by inoculation of the breast, in two instances entirely independent of each other; in the first place, to a woman who afterwards gave birth to one dead child, and two infected ones; and in the second case, by one of these children to a perfectly healthy nurse, the disease in both cases first exhibiting itself in sores on the breast;

2. The appearance of secondary symptoms in both cases, and in the second, after the free exhibition of mercury — these symptoms being, in the first case, an eruption, sore throat, and pains in the head, chest, and bones; and in the other, a sore on the lips, fissures at the angles of the mouth, nocturnal headache, &c.;

3. The effect of incomplete treatment in the case of the mother, and the inefficacy of free salivation in protecting her offspring. When first treated before her second marriage, she took only sarsaparilla. When first seen by me, after the birth of her first living child, she was immediately put on the use of the muriate of mercury, but had not taken more than four grains when she became salivated, and the medicine was discontinued, and sarsaparilla alone given, with the addition of sulphate of quinine af-

terward. This course relieved her from all her secondary symptoms, and restored her general health, which had before been poor; but was insufficient to protect her future offspring from the effects of the virus. The mild mercurial treatment should have been resumed, and continued at least two or three months;

4. Unquestionable evidence of the hereditary transmission of the disease, as exhibited both in the birth of a still-born child, which must have presented some morbid appearances as to colour, &c., to have led the physician to ascribe its death to this cause; and in the birth of two children, with the well-marked symptoms of the disease, by one of whom it was communicated to a third person;

5. An account of the most common form in which hereditary syphilis is seen, with its characteristic affection of the skin, its seat, and the accompanying symptoms, &c.;

6. An example of two different kinds of treatment; the *mixed*, in the first case, both the nurse and child having taken mercury at the same time; in the second, the child only having taken it;

7. The length of time necessary for the cure of the child, as shown by the repeated returns of the symptoms in consequence of the irregular attendance of the child, although all the first symptoms had disappeared very promptly;

8. The great tendency to relapse at particular periods;

9. The occurrence of convulsions, which are not an uncommon effect of mercury, especially when too freely given to a very young child, of which more full notice has already been taken in another place, and which occasionally prove fatal;

10. The appearance of what is supposed to have been mercurial eczema, of which I have never met with a recorded case in a young infant, and the occurrence of which is doubted by some, although Burns, in his midwifery, alludes to its taking place in patients of that age. An affection which was not recognised at first, and which soon disappeared after the discontinuance of mercury, but returned again, probably owing to the milk of the nurse, a circumstance which was not suspected, from the fact that she exhibited no marks of mercurial influence;

11. The inefficacy of remedies merely directed to the improvement of the condition of the stomach and bowels for the removal of these peculiar symptoms, as shown in both cases. In the first

case, doubtless from their nature not being understood; and in the second case, to test their efficacy within prudent limits, and to watch the developement of the disease unchecked by its appropriate treatment, of which it affords a remarkably fine example, at the same time that we are enabled to witness the effects of this palliative treatment in modifying the symptoms, and even banshing them for a certain period;

12. The effect of vaccination, which appeared to take, but to have its natural progress arrested, either by the cachectic state of the patient, or by the peculiar nature of the constitutional disease.

Did our limits permit, a legitimate and interesting branch of our subject would lead us to the study of the mode of communication of the disease to the nurse, and the modification of the symptoms exhibited in such cases, with the train and order of them, and also the characteristic forms which they assume when the infection is given to her husband by the nurse, which would exhibit to us several peculiarities worthy of note. We might also with interest, and not without profit, extend our inquiries to the mode in which the infection is spread so as to taint children and attendants by accidental inoculation, &c., of which some interesting cases have already been stated. And, if disposed and at liberty to enlarge our limits still more, and to trespass farther on the patience of our readers, we might direct their attention to the more remote effects of this virus in deteriorating the constitution of the child, and entailing upon it an enfeebled and miserable existence, even when no signs of its presence are developed in the skin on mucous membranes, and when the symptoms belong to the class called by Ricord, "*the tertiary.*" A state in which the symptoms are of that indefinite character generally referred to scrofula; a condition of the system of which it is the more important to recognise the true character, because it calls for a corresponding modification of treatment, and one in which mercury does no good, and may do positive injury. But the field is too large and the harvest too abundant for one reaping.

ART. II. *Cases of Monomania.* By JAMES MACDONALD, M.D., one of the Physicians to the New-York Hospital.

AMONG the great variety of disagreeable duties which the physician is called on to perform, few are more painful or embarrassing than that which requires him to confront in court a patient, (perchance an old friend,) labouring under monomania, and to declare, under oath, that he is insane, and not only unfit for the enjoyment of personal liberty, but incapable of managing property, accumulated, perhaps, by his own industry and talent. But what is of more importance to society and to the character of the physician concerned, is the difficulty of performing this duty satisfactorily, when the patient is but slightly deranged. How, in the estimation of an inexperienced and unprofessional jury, can a man who talks so well and deports himself so unexceptionably, be insane? What is insanity? is a question that has long puzzled physicians, jurists, and writers on medical jurisprudence. It is a question which has not yet been suitably answered, and in the present state of knowledge does not appear to admit of a satisfactory solution. Considering the complex nature of mind, and the variety of faculties, sentiments, and propensities involved in its disorders, and recollecting the hitherto unsatisfactory definitions of diseases purely physical, such as fever and inflammation, this is not singular. It is not intended, however, on the present occasion to discuss this question, but simply to relate by way of illustration two cases of monomania which were stamped by the same peculiarities, and which finally terminated in the same melancholy manner. Though resembling each other, they occurred in individuals of very different characters — the one was a highly intellectul man; the other a person of very ordinary capacity. Both were brought before the court for examination into the state of their minds — both puzzled judge and jury — both proved insane upon a second trial — both so far recovered that they were discharged from the asylum — both lapsed into melancholy, and both ended life by suicide.

Case I. — S. Y., admitted into Bloomingdale Asylum, August 1st, born in England and resident in New-York for ten or twelve years, age 35, single, merchant. Hair dark, eyes light, head large, great anterior and superior developement, animal propensities strongly marked. Has been a free liver and has indulged in beer-drinking; for several years past has domesticated with a designing woman, whom he now calls wife. It is six weeks since he gave the most decided evidence of derangement, and much longer since he began to manifest symptoms of mental aberration.

As at the time of his admission no remakable deviation from the normal state was observed, either in mind or body, his only treatment was confinement to the house and grounds, the administration of a warm bath, followed by an aperient, and the substitution of bitter infusion for his accustomed drink.

August 9th.—Until this morning his conduct and conversation had been, in the main, correct. He now talks wildly, saying his friend R. has been for a long time trying to kill him by poison and other means, and has sent out persons at night to "upset him." Skin sallow, tongue loaded, bowels torpid.

℞ Hydr. Submur. Pulv. Ant. āā gr. v. h. s.—H. Pulv. Rhei Magnes. calcin. āā ℈j. c. m.

August 20th.—Saw a lady here yesterday, an entire stranger to him, who he insisted was his wife. Says he has two horses that can travel through the woods like wolves; when Mr. R. reports him drunk, he is frequently 500 or 1,000 miles off in an Indian wigwam, where he can go in five or six hours. The horse, which he rides by lying flat on his back, kills wolves. Much mental excitement. Yesterday tore in pieces a blanket.

On the 9th instant, began first to destroy things without apparent motive; tore up a hat belonging to another patient, and then commenced with his own. He then became so noisy and offensive to the other patients that it was necessary to send him to the Lodge.

August 22d.—Continues to talk about his horses; says he has one that can travel over swamps and ditches; nothing but houses can stop him, and if these be not strong, he kicks them down and goes through.

August 23d.—Says Red Jacket is here, and points him out in the person of one of his fellow patients. He now got so much better that he was taken back to the main building.

September 15th.—His mental excitement returning, and preceded by disorder of the digestive functions, constipation of the bowels and increased vascular action; ordered active purging and cupping.

September 19*th.* — Was cupped yesterday and ℥ vi taken from the occiput; but having become violent, noisy, destructive, and offensive to convalescent and quiet patients, has been removed to the Lodge.

September 20*th.* — Talks wildly and confusedly about the earth having been turned up-side-down by screws; has a plan for "sawing Long Island in two, and another for cutting through the earth at right angles with the horizon."

September 25*th.* — Saw his friend R. yesterday, and has been much worse since, having torn in pieces his trowsers. When asked why he did this, replied, that it was for the purpose of making new clothes, which he does by submitting the old ones to friction.

September 29*th.* — Some of his injudicious friends caused him to be removed to the city by "Habeas Corpus." He behaved so well, and talked so plausibly before the Recorder, as to leave an impression on the minds of many present that he was perfectly sane, and had been persecuted and unjustly confined. He was, notwithstanding, brought back to the asylum.

October 1*st.* — Walking about the hall and yet tranquil. Mr. R. had an interview with him in the course of the day, for the purpose of furnishing himself with facts to substantiate the opinion which he expected to be called on to give; but he seemed suspicious, declined answering the most common questions, evidently for fear of implicating himself, and was rather abusive.

October 2*d.* — S. was again taken before the Recorder, where I was examined respecting his case, and stated all the facts connected with it. His deportment was correct and he said not a word that could be construed into insanity until his converting old into new clothes was ridiculed; when he boldly asserted his power to do so, to the utter dismay of his lawyer and pretended friends.

October 13*th.* — On his return to the asylum, which was immediately after the investigation, he conducted himself with propriety till within the last few days. Began the work of destruction again last night; asserts that he is the owner of the asylum buildings, and that he has discovered perpetual motion.

October 14*th.*—More wild and confused than ever; when asked why he had destroyed his bed clothes, said it was to save lives.

October 15*th.*—Destructive propensity still active; perceptive faculty disordered; calls Mr. F., (one of the patients,) his grandmother.

October 16*th.*—Violent, wets his bed and pulls it to pieces; appetite voracious.

℞. Hydr. Submur. ℈i Ant. Tart. gr. ss.

October 18*th.*—More calm, complains of pain in the left shoulder. Let him have a warm bath; to be repeated.

October 19*th.*—So much more rational that he has been brought back to the main building.

October 28*th.*—Not so well; unhappy, fault-finding, talks in the old strain about the fleetness of his horses, his fancied exploits among the Indians, and his converting old into new clothes.

November 11*th.*—Has been at the lodge for some days past; noisy, discontented, violent, destructive.

H. Bal. Calid. 100 Fah. q. d. per hor. unam.

November 13*th.*—Excitement subdued, pulse 86 and small, countenance haggard, skin sallow; ever dissatisfied and complaining. ℞. Mass. Pil., Hydr. Ext. Conii. ä ä ℈ij. m and div. in Pil. No. xvi—i m and v. Baln. omit.

November 29*th.*—Has been at the main building about a fortnight and more rational than he has ever been since here; but to-day begins to talk wildly again, eye sallow. H. Hydr. Submur. ℈i.

November 30*th.*—Again destructive and talking incoherently about the Indians, &c.

December 2d and 3*d.*—Raving, vilolent, destructive. Ap. C. C. occip.

December 4*th.*—Though the blood flowed freely, still wild and incoherent; says he is on Bosworth field.

December 17*th.*—Somewhat better.

December 23*d.*—Entertains ideas of greatness, says he has all along been at the head of affairs in England; combative and destructive propensities both active. Rep. Baln. Calid.

February 2*d.*—The baths proving useless have been discontinued; destructive of clothes yet. Setaceum in Nucha; continue vegetable diet.

March 8th. — The seton produces a most copious discharge; and although it has been in only a month, he has been quite rational for a fortnight, has been brought back to the main building; had an interview with his brother last week for the first time, and is no worse in consequence; bowels costive, Pil. aloes c. ij. Pil. Coloc. c. i. h. s.

March 26th. — Continued to improve until this date, when he was discharged *recovered.*

After leaving the institution, he embarked immediately for England, continued sane during the voyage, and until he reached a large town in the interior, not many miles from his native place, when he retired to a room in a hotel and committed suicide. When S. Y. recovered from derangement, he learned that the mercantile house of which he was a member had failed. Mortification at returning home reduced to poverty, broken down in health, and shattered in mind, together with the dread of meeting his father, may be supposed to have hurried him to this last fatal act.

Case II. — A. B. was admitted into the Bloomingdale Asylum on the 17th November. He was about 50 years of age, short in stature, and disposed to obesity. His head large and strikingly beautiful, his complexion fair, and his temperament sanguineo-melancholic. Until the last year of his life, which has been spent in retirement in the country, he had been actively engaged in mercantile pursuits, and had been at the head of one of the first houses in the city. Always remarkable for chivalrous notions of honour, generosity of disposition, brilliancy of imagination, intense activity of mind, and facility in gaining knowledge upon every variety of subject. He did not fail in the main pursuit of his profession, and withdrew from business with an ample fortune.

Two or more members of his family had been insane; and for several years previous to leaving the city, he had been subject to occasional paroxysms of monomania, marked by great exhilaration of spirits, inordinate activity of mind, ardent and profuse exercise of benevolence towards strangers, religious and charitable institutions; accompanied by suspicion and alienation of feeling from his real friends and relatives. These paroxysms were always followed by a corresponding degree of depression, during which his intellectual faculties preserved their integrity, and his affections centered in the right place. It may be said that the last eight years of his life had been passed in one of two extremes — the most abject despondency, or the most delightful exhilaration. During this latter state, under a misguided philanthropy which excited in his mind the wildest schemes for doing good, without counting the cost or calculating the probable success of the means employed, he performed some of the strangest acts of benevolence that can be conceived. The relation of a single instance will suffice. As was his wont during the reign of the exuberance of animal spirits, he was gayly walking or rather dancing through the streets at midnight, singing the fragment of some old sentimental song, when he encountered a solitary female to whom he addressed his ditty, and with whom he soon made himself acquainted. Bent on doing good, he drew from her the story of her seduction, and determined to reclaim her. He conducted her home, volunteered to pay her board provided she would entirely discontinue the practice of her craft, obliged her to reveal the state of her health, employed a physician to cure her of syphilis, wrote to her mother in the country that the work of reformation was begun, and that she would soon have her lost child restored — and took upon himself the office of father confessor and spiritual adviser. Now A. B. though when under the influence of mental excitement profaned a little, drank a good deal, and committed many extravagances, was always more or less guided by religious impressions, and was at heart really a pious man. To be sure, he had his own peculiar way of showing this: thus he was regular at his private devotions; but instead of repeating, he sang his prayers, and accompanied them by salutations and various other inappropriate movements. In talking he had a way of saying, "a d———d fine fellow," or "a d———d good joke." When reproved and told that this language was inconsistent with the character he had assumed, he defended himself by saying that he was a man of ardent temperament, and that the objectionable expression coming from him was no more than *very* from the mouth of a man of ordinary temperament.

The physician whom he employed to attend the poor girl, related some highly interesting scenes that passed between the patient and A. B. Imagine "a madman gay," under the delusion of being entitled to a throne, in the full vigour of manhood, and apparently with all his passions strongly developed, and committing all sorts of extravagances, about to set himself to work, with feelings entirely platonic, to reform a girl of the town. Imagine him gayly dressed, dancing into a house, assembling the frail sisterhood, lecturing them on their vices, making them all bend their knees while he prayed most devoutly, and then rising, take his leave after kissing, or in his own language, giving his protegee "a chaste salute." Imagine all this, and we have but an imperfect idea of the whimsical benevolence of this unfortunate gentleman, and of what actually occurred on the occasion alluded to.

About a fortnight previously to being sent to the asylum, he arrived in the city evidently in a state of mental excitement. The election, meeting with old friends, drinking, which he indulged in only when insane, increased that excitement. He went to Baltimore on business, and there launched into the sea of politics, deciding, as he supposed, the fate of the election. Upon returning to New-York, he committed so many overt acts of insanity that it was deemed necessary to place him under immediate restraint. And now begins that part of his case which is most interesting — which involves the question of his sanity. He had been formerly for a few months a lunatic at law, and justly suspected his friends would again institute proceedings against him.

Madman as he was, he displayed a degree of diplomatic tact that would do no discredit to the school of Metternich. On discovering the intentions of his friends, instead of making an open show of resistance, he formally proposed a compromise. As he had lost confidence in his natural friends, all direct intercourse must cease; but as business matters required some sort of intercourse, he said if they would allow him to choose a third person to go between them, and to visit him two or three times a week, he would submit. His friends consented, and he chose his visiter, not for the ostensible object as a medium of intercourse, but that he might have an interested individual to testify to his sanity in opposition to the officers of an institution, naturally inclined in its favour, whenever his case should come on for trial. He selected a physician of high standing, and possessed of more than ordinary knowledge of medical jurisprudence, with the understanding that he was to be regularly paid for each visit.

Though when first admitted he was in a high state of mental excitement, as soon as the officers left him in custody of the asylum he became calm, and broached to me, with his usual finesse, the matter of having engaged another physician. He expressed the utmost confidence in my skill, immediately sought my professional advice, said he would follow all my prescriptions, and added that he had employed Dr. C. D. as a sort of spy on his treacherous friends. Venesection, and the absence of late exciting causes, were soon followed by a tranquil state of mind; and on the 19th he talked quite rationally. The liberty of the grounds were now granted him on certain conditions; but he overstepped the limits so repeatedly, that it was necessary to confine him to the house again on the 1st of December. This act of justice enraged him, and so much the more, that his insanity had increased. On the previous evening he spoke of having "attained the 30th degree in masonry, (but one remove from divinity;") but immediately fearing he had committed himself, turned around and said to me, "this is not official, and you must not make use of it." He soon got excited, and went on talking about masonry, heraldry, and religion. On Sunday he was allowed to go to the village to church, where he left his prayer-book as a pretext for returning and getting more stimulus, which he was prone to indulge in only when under mental excitement.

Talked to-day of "complaining to Old Hickory against all the lunatic asylums in the country."

December 3d.—℞. Infus. sen. comp. to be followed occasionally by seidlitz powders and warm baths. Diet light. It may be mentioned that his medical treatment was inactive and irregular; because, under the belief that he was sane, he could be persuaded to use only certain kinds of remedies, and those but occasionally.

December 6th.—Exceedingly anxious to visit the city; mind yet much disordered. In a conversation with me to-day, said that if we lived twenty years we should see Napoleon on the earth again; that there will be a resurrection of him as well as of Alexander, Washington, and all good and great men, but not of such rascals as Cæsar, Ben Franklin, Tom Jefferson, &c.

Now being prevented from going to town, he became excessively enraged, and vented his anger at me in various ways; but finding it answered no purpose, he retracted all he had said. After a period of seclusion, his mind becoming more composed, and his anxiety to return home continuing, it was proposed that he should remain here a week longer, with the privilege of going out when he pleased, but with the promise that he was always to be at the asylum at meal-time. At the expiration of this period, if he continued as well as he was at the commencement, he was to go home.

December 23d. — This being the day fixed for A. B.'s departure, it was deemed advisable that he should go.

December 30th. — Brought back by an officer in a wretched plight, his clothes torn and dirty; he went immediately to bed, where I found him singing, under great mental excitement, but happy. Said he, with great self-complacency, "do you know whom you have been treating so long? I am St. George, sir, and have received many communications from on high since I left here. In a few days I expect a deputation from the Free Masons of the whole country, or even of the world, to request me to place myself at their head. I have received the blessing of the Catholic Bishop, and have sent on to Rome certain credentials for an important event that is approaching." Among other things, he revealed to me, with great gravity, that "the devil is white."

Considerable physical excitement.

Treatment. Seclusion, low diet, warm baths, and laxatives.

January 1st.—Still great mental disorder. Seems to live entirely on the productions of his own imagination; has prints which he fancies emblematical of extraordinary things; has his trunk filled with artificial birds and holiday gifts for children; says he will marry Mary Queen of Scots, who is now on earth, and has been for a long time; after marriage they are to live at Jerusalem, where I perhaps may become their physician and the queen's accoucheur. During his week's absence from the asylum, he passed through as many adventures as would happen to an ordinary man in the course of a whole life. He went to Philadelphia, introduced himself to Mr. and Miss Kemble, in the dress of an Englishman of the old school; his head powdered and his legs habited in shorts. He made Miss K. an offering of a complimentary poem, the production of his own pen. He proposed himself to the manager of the theatre at a debutant, gave various recitations and songs; frequented the public places, perambulated the streets at night, hunting out all the strange corners that would yield him merriment; got into difficulties with watchmen; but finding himself growing mad, determined to cut short his career, and to place himself in the Insane department of the Philadelphia Hospital. He accordingly presented himself at the porter's lodge, early in the morning, and demanded admission. This being refused, he knocked the porter down, and proceeded towards the quarters for the Insane. But the porter rallied, and by the aid of an assistant expelled the intrusive patient, who soon found out the lodging of one of the visiting physicians, and procured admission in the legitimate way.

January 4th.—Still under considerable excitement, and various delusions; says that it has been communicated to him that all the Irish of Scottish descent in the north of Ireland were put to death on the 31st of last month, (four days ago.) Though in rather a humble and contracted sphere, manifests an inordinate fondness for admiration and influence. In the absence of other listeners, gathers in his room the merest imbeciles or the most extravagant mad-caps, and discourses in grandiloquent style of his descent from the kings of Milesia, and of the profundity of his researches in the arcana of masonry and heraldry. On Sunday, his sense of religious obligation will not allow him to pass the day without its due observance. If confined to the house, he gets such patients together as he can persuade to become listeners, and goes through the services of the church with great fervour; but wo to the man who disturbs the solemnity of the occasion; neither time nor circumstance saves him from his anathemas.

January 8th.—Mind considerably sobered; says he begins to think he has been extravagant, but if listened to, soon runs into his usual vagaries about masonry, &c. His only treatment at present, warm baths.

January 15th.—Continued to convalesce, or rather it may be said to keep his mind under control, until yesterday, when he went to the city to defend himself against a writ "de lunatico inquirendo." Before the hour for trial he went around town, called on a Jewish Rabbi recently arrived from Jerusalem, got excited, indulged in strong drink, and his case not coming on, returned to the asylum quite frantic.

January 16*th.* — Excitement in a great degree subsided; attempted to explain his conduct of the 14th inst. and quotes Hippocrates to prove the propriety of getting drunk once in a while.

January 22*d.* — He remained quiet till yesterday, when he again went to town to defend himself, and now it will be recollected that though he had exercised a wonderful degree of control over his feelings and the action of his mind, no radical change had taken place in his disease, and that he still entertained the most absurd delusions. He bore the excitement of the city much better than he did last week. The trial came on, the evidence was all positive and uncontradictory; even the testimony of the physician employed by himself went directly against him, and so confident was the counsel employed by his friends, that the case was submitted to the jury without a remark.

At this stage of the proceedings, A. B. requested that he might be left alone with the jury, to make some explanations which he deemed necessary. The request was readily granted, on condition that I also should remain.

His personal liberty and the voluntary use of his property were at stake, and his mind seemed to rise with the occasion. Naturally eloquent and ready, he got up and addressed the jury with great effect. He began by acknowledging that he had unfortunately been the subject of mental infirmity, from which, by proper care he had recovered, as must be obvious to all present; he avoided dwelling on the peculiarities of his derangement, for he well knew that in an unguarded instant he might commit himself; he alluded to the good sense and justice of the jury; spoke directly of the learning and high character of the commissioners constituting the court before whom he was standing, and aimed a delicate compliment at the medical member of the commission, for his professional skill and metaphysical acumen. He then gave a concise, clear, and correct statement of his pecuniary affairs, which corresponded precisely with that already placed before the jury, and submitted his case to them with entire reliance on their judgement and sense of justice. He returned to the asylum with me that night in high spirits, well pleased with his address, and the obvious impression he had made on the court and jury, and quite sanguine that he would be released. In speaking of the compliment addressed to the medical member of the commission who belonged to the society of Friends, he said; "I feared that man more than either of the rest, he looked so thoughtful and sagacious," and added "did'nt I tickle the Quaker?" Excepting A. B., we were all suprised next day to learn, that the jury had decided he was a sane man.

February 4th.—Is yet at the asylum, continues tranquil, and conducts himself with much propriety.

February 6th. — Discharged this day by an arrangement between his own and the opposing counsel.

February 8th. — Brought back by officers, not in an excited but in a depressed state; owning his madness and regretting the follies committed under its influence, with extreme bitterness of spirit. It seems that as soon as he got into the city he lost all self control, and actually ran wild.

February 9th. — At the instance of his own counsel, was taken this day before a sheriff's jury by an order from the Chancellor. He made no defence, was found a lunatic, and submited with good grace.

February 13th.— Mind in a very tranquil state; says he has never been so rational since he has been here as he is at present, and there is a good reason for this. As long as he hoped to defeat his friends and retain the control of his property, his mind was in a constant state of anxiety and ferment; but as soon as this prospect was removed, his wandering thoughts were called home, and he began to reflect seriously about himself. This strong moral influence, aided by seclusion, light diet, warm baths, and laxatives, soon restored him to a comparatively rational state of mind.

February 20th. — Continues to improve; goes to the city to spend a few days.

February 24th. — Returns to the asylum in a composed and pretty correct state of mind.

February 26th. — Discharged much improved.

Though very much improved, he was not considered quite sane, because, from being unduly excited, he had sunk into the opposite extreme. It is true he judged correctly of the relation of things, and was perhaps entirely capable of transacting business, but the depressed state of his feelings gave a sombre hue to everything brought before him. In this state he returned home, and continued in that frame of mind which for several months usually succeeds a paroxysm of excitement. His despondency now increased, and in an unexpected moment he destroyed himself.

Both these cases show,

1st. That where there is a strong motive for exertion, what an extraordinary degree of self-control the insane, even when under the most powerful delusions, can exert over themselves.

2d. That in judging of the sanity or insanity of an individual, we should not take a single, isolated view of him as he may happen to be at the moment of inquiry, but the whole of his case in connection.

3d. That a physician who is to be called to testify in a case of insanity, should not only provide himself with an opinion, but also with the facts upon which that opinion is founded.

These cases, viewed as a whole by persons at all accustomed to the operations of the mind in a state of disease, would not for a moment admit of doubt. They are marked by what jurists consider conclusive, and what they have hitherto deemed indispensable to constitute lunacy — distinct delusions. But there is a form of mental derangement long recognised by writers on medical jurisprudence in France and Germany, and more recently by some of the English authors, and variously denominated mania without delirium, impulsive insanity, and moral insanity, in which, without the existence of hallucination, mental disorder manifests itself by the conduct rather than by the conversation. It is under the influence of this malady that persons hitherto of unexceptionable character, wantonly destroy property, fire houses, and commit murder.

Art. III. *Remarks on the Iodide of Potassium, with Cases.*

By Wm. B. Casey, M. D. of Middletown, Conn.

Every new remedy, upon its introduction, has two kinds of difficulties to encounter; one, arising from the skepticism of that class of practitioners, who in their adhesive fondness for antiquity, always oppose novelties without investigating their claims at all: the other, and perhaps more formidable difficulty is congenital with the medicine, and springs from the over-zealous warmth of its advocates, who claim for the agent which they usher into the world, powers that are next to supernatural. I have said that the latter obstacle was the more formidable, and the history of a hundred articles belonging to the Materia Medica, will bear me out in the remark; for many a valuable remedy, is thrown into some obscure corner of the shop, which, had its claims been more modestly advocated in the beginning, would have taken its proper station, and have received that share of attention to which its real merits entitled it. Every one's reading must have supplied him with illustrations of this fact; it is therefore unnecessary for me to particularize.

In the present instance, and at this day, we do not fear such a result for the remedy in question. Iodine is too well known and appreciated to be liable to the first mentioned difficulty; and I shall try to guard myself from the other error, by detailing a few cases which I have treated, and in which the remedial effects of Iodide of Potassium have appeared to me no less clearly ascertained than beneficial.

The modus agendi of the Iodide, in some of the cases, (as in enlargement of glands,) can be explained, as far as the fact of absorption can be accounted for at all; but in others, as in the secondary pains of syphilis, the great and undoubted relief afforded, can be explained, satisfactorily, by no hypothesis with which I am acquainted. Not being of a highly stimulant nature, it may be administered in almost all states of the system where its employment may be indicated. No age appears to be unsuitable for its action.

But very few inconveniences have arisen from its use within my observation. It is indeed liable, occasionally, to induce irritability of the stomach and bowels, but this effect yields without other treatment than the temporary suspension of the medicine.

I have found one or two patients complain of "heaviness" and of some confusion of intellect after taking it for a short time, but as the confusion was natural and beyond the reach of medicinal agents, I have paid no attention to such complaints.

The charge is made against Iodine and its preparations, of causing atrophy of some of the glands, as the mammæ and testicles; but after watching for such occurrences, I have not seen them follow a pretty long continuance of these medicines — I mean when these glands were previously in a normal state. Still I am not willing to deny that such a result may ensue, if any of the compounds of Iodine be persevered in for a long time. Having premised these few remarks, I proceed to relate a few instances in which I have employed the Iodide of Potassium with advantage.

Case I. — *Lupus.* — Mrs. Penny, æt. 56. Health previously very good, now feeble; no appetite, bowels costive; has four children, all grown up and healthy. Came to me August 16, 1838, with the following disease, which I thought to be Lupus Exedens, and was confirmed in the opinion by Dr. Bulkley. Her face presented a horrible appearance. The nose was very much enlarged, of a dull purplish hue, swelled out into several irregular tumors, from the size of a pea to that of a filbert; her upper lip was tumid, and covered with cicatrices like those left by a burn; the forehead and right side of face were covered with the same kind of scars.

The tongue was split in several places, one deep fissure running down the middle, the left side eaten out as if by rats; the soft palate perforated in two or three places. A very offensive discharge flowed from the nostrils; her voice was almost inarticulate, and she spoke in a faint whisper. Not so much pain as formerly.

The disease, which commenced two years ago, is now spreading to deeper seated parts. She has been treated by various physicians without benefit. After some slight preparatory treatment directed to the digestive organs, I began August 20th, with the solution of Iodide of Potass, in the proportion of ʒss. to ℥iv of water. Of this a teaspoonful three times a day was directed. I gave also, a weak solution of creosote, to be injected up the nostrils.

August 24th.—The patient returned to the Infirmary, (in my absence,) and Dr. Bulkley states that she expresses herself as very much better. Says she feels as if she had new life, her pain has diminished, the discharge is not so offensive or profuse. Dr. B. continued the solution of the Iodide of Potassium.

August 29th.—The patient is very much improved; the tongue is healing, discharge from nose less in quantity and the odour less offensive. Speaks more distinctly, (but still in a whisper,) nose smaller, great improvement in the general health. Continue the treatment and take Pil. Col. Comp.

September 14th.—Improvement marked and progressive; tongue now healed except in one or two places; nose much smaller and with very little discharge.

October 30th.—Still improving; has been without medicine some time, and neglected herself, but feels a great deal better than when she first came under treatment. Repeat Iod. Potass.

November 15th.—The tongue has entirely healed; voice much more distinct, no discharge from the nostrils; nose reduced to nearly the natural size. General health quite good; appetite and digestion strong. Continue treatment.

Since this time I have not seen her, but one of her daughters has since informed me that the disease has not returned.

I shall make no remarks on this case, besides simply stating, that in addition to the cure of the local disease, the general health was also rëestablished. The Iodide was given in the dose of a teaspoonful of the solution, three times a day, making about one grain at each dose.

Case II.—*Secondary Syphilitic Pains.*—James Giles, aged 35 years, was born in England. Five years ago he contracted syphilis, previous to which his health and habits were good. He has several spots of Porrigo Favosa, on the crown of his head, which he says he contracted from a wet nurse when an infant. His condition at the time I first saw him, was as follows:

February, 1839.—Very great emaciation, feebleness, loss of appetite; whole outer table of the scull carious; several openings in scalp whence issues a very offensive thick discharge; various parts of the scalp which are sound have a doughy feel, and by pressure matter exudes; two very large holes in the forehead, each about one and a half inches long by one wide, separated by a piece of skin about one inch wide; bone seen in them. A probe passes in every direction under the scalp, and meets everywhere with roughness. Suffers intense agony from pains in limbs and body, cannot turn in bed. Dr. Bulkley, under whose charge he has been, has several times given him the Iodide of Potassium, with complete relief to his sufferings. When I first saw him he had been without the medicine for some time and was suffering extremely. I gave him the Iodide of Iron in doses of 10 drops, three times a day, gradually increasing the dose. This had as great an effect as the Iodide of Potash, in banishing the pains, but as soon as he intermits the use of the article, his pains recur with all their severity. Under the use of this and a pill of quinine and opium, his condition has been slowly improving; head feels firmer, less discharge, gains flesh, appetite good, sleeps well, and can walk some distance. He has several times been without medicine, and invariably the pains return. Many powerful remedies, as arsenic, conium, &c., have been tried, without effect. I should mention that he had been salivated for the primary disease, and has been suffering under the secondary symptoms about two years. I have doubts of his ultimate recovery, and bring the case forward merely to exhibit the power of these preparations of Iodine in controlling syphilitic pains, which in this case exceeded in violence all others I have ever witnessed.

Case III. — *Caries of the Vertebræ.* — Charles Van Buskirk, aged 5, born in New-York; scrofulous diathesis. Two years ago next March, he fell down stairs. He had been previously healthy, except an attack of scarlatina from which he has just recovered. Received this injury in March, '37. No notice was taken of it till May, of the same year, when he complained of it, and his mother found a small lump on the back about the second dorsal vertebra. Dr. Van Arsdale, who was consulted, put a blister on the spot. Dr. D. L. Rogers, in August, put issues in the back and gave the child some pills and powders. In the course of the next few months, he became worse, and was unable to stand. Was then taken to several bone-setters, Indian doctresses, &c., and was constantly getting worse till April, 1838, when Dr. A. Dubois saw him, and prescribed the Iodine of Potassium. Under the use of this, he began to mend. He fell into my hands soon after, and I continued the treatment by repeated doses of the medicine. He was soon able to stand by a chair, and in the course of a few months he could walk, and now he plays about the street in good health. There is, of course, deformity, and there is difficulty of breathing and cough, but no tenderness on pressing the spine. The medicine in this case was given in grain doses, but often discontinued for two or three weeks at a time. It seemed occasionally to cause looseness of the bowels, but I find that since he has discontinued the treatment he is equally liable to that complaint.

Case IV.—*Enlargement of the Parotid Glands.*—John Hemming, five years old. This was a case of great enlargement of the parotid gland, following scarlet fever. The patient was under my care all the time of this sickness; not of scrofulous habit. An abscess formed on each side of the throat during the course of the disease, that on the right side being so large as to excite in my mind great fears of suffocation. I lanced both sides, and the primary disease, in time, went off, but there remained a hard tumor in the angle of the jaw (on the right side, as large as a Seville orange,) not very painful except when the jaw was moved; it showed no disposition to suppurate. The use of ʒiss. of Iodide of Potassium in grain doses caused the speedy removal of both the swellings, and the child completely recovered.

Case V.—*Enlargement of the Spleen.*—Mrs. Hall, aged 21, leucophlegmatic temperament; has had the menses suppressed for 10 months; intermittent fever almost four months; had also remittent fever when in Mississippi a year ago. Was in the city hospital four months ago, and treated for intermittent fever. Dr. Maxwell, resident physician, noticed then an enlargement of the spleen. She was cured of fever and discharged; but the chills soon after returned.

April 29th, '39.—Is suffering from intermittent fever of the tertian type; spleen and liver enlarged; uterus also more voluminous than natural. The spleen could be felt to the right of the umbilicus and to within an inch of the pubis; also a very little distance from the ilium of the left side; no appetite, bowels costive. After a little preparatory treatment I gave her grs. xviij of quinine in six doses; this interrupted the chills; no paroxysms since. I then ordered her the iodide of potassium ʒss. to ℥iv of water: a teaspoonful three times a day. This quantity was repeated twice. On subsequent examination I could not feel any portion of the spleen or liver. I gave her then three pills of aloes and iron, and the menses appeared the next day without pain, and as formerly. I cannot attribute this last result to the pills, and therefore infer that it was owing to the preparation of iodine. She has been regular again since, and is now in good health.

HOSPITAL REPORTS.

Select Surgical Cases. Reported by Gurdon Buck, M. D. Surgeon of the New-York Hospital.

INJURIES OF THE HEAD.

Case I.— Fracture of the skull; trephine. Death from phthisis two years afterwards; dissection.

Peter Toohey, a boatman, aged 22 years, born in Pennsylvania, admitted into the New-York Hospital August 3d, 1837. Early in the morning of the preceding day, a block fell from aloft upon his head and stunned him for about fifteen minutes. At the posterior part of the right parietal bone near the median line, was a contused wound of the scalp, with its edges detached from the surface beneath, but no denuded bone or fracture was felt. He continued rational after recovering from the first effects of the injury; he complained of dizziness, in the erect position, and of stiffness in his neck, which bore the marks of a severe bruise. Ordered a cathartic of calomel gr. x. to be followed by compound infusion of senna; a poultice to be applied to the wound.

August 7th, (fifth day after the injury.) Patient was suddenly seized in the forenoon with convulsions that lasted about fifteen minutes, and recurred four times in the course of an hour and a half. The muscles of the right eye, of the left side of the face, and of the left limbs, were convulsed; frothy saliva flowed from the left angle of the mouth, and both pupils were more dilated than natural; in the intervals he was rational and free from pain, could protrude his tongue in a straight line, though the limbs of the left side were paralyzed. Sensation continued unimpaired; the pulse was 80 and soft, and the temperature natural and uniform.

Until this attack the patient had appeared to be doing well; he had complained most of his neck and left arm, and was unable to raise his hand to his head; this seemed to be owing to contusion of the parts, marks of which were evident upon the neck and left shoulder.

A dulness of manner and slowness in answering questions had been noticed, but supposed to be constitutional. The nurse now reported for the first time, that since his admission he had dragged his left leg whenever he was assisted to walk to the adjoining room.

It was therefore apparent that hemiplegia had existed to a certain degree since the accident. The wound was again carefully examined, and the edges found coated with dried blood, without any suppuration ; the finger being introduced, a fracture was detected, the edges of which were not upon the same level. The necessity of an operation being obvious, no time was lost in resorting to it. The existing wound of the scalp was dilated, and its edges dissected up, when a thick and firm coagulum of blood was discovered closely adhering to the surface beneath, and filling up a depression consisting of several fragments of bone driven in so as to form a hollow of half an inch in depth. To the touch, this coagulum felt so much like swollen pericranium that the extent of the injury had escaped detection at the first examination. The fragments being firmly locked in together, the trephine was applied, and with the aid of forceps and elevator, sixteen pieces of bone of various sizes were extricated.

Between the dura mater, which was uninjured, and the cranium, another coagulum was found, and with the handle of a scalpel as much of it as possible was broken up and removed. An opening of more than two inches in diameter was left in the skull. The newly divided edges of the wound were kept in contact by two sutures ; and an emollient poultice was applied. A cathartic of calomel gr. x. Rad. jalap pulv. gr. xv. was also prescribed.

During the first night after the operation, the patient was restless and had two paroxysms, in which all his limbs were alike convulsed. Erysipelas showed itself the next day on the right side of the face, with a puffy, swollen condition of the right eyelids. Within the ten succeeding days, the erysipelas spread to both sides of the face, but without severe constitutional disturbance ; there was no return of the convulsions ; the wound gradually took on a healthy condition, and the left limbs recovered their natural power. The treatment consisted of mercurial cathartics, sudorifics, and emollient poultices.

For several weeks afterwards, small portions of bone were discharged from the wound, which at length healed up ; and for some time he had difficulty in walking over an uneven surface, and in going up and down stairs ; however, he finally regained the perfect use of his limbs, and was discharged cured, Nov. 17th, 1837.

In the month of October, 1839, more than two years after the operation, Tookey died in the hospital of phthisis ; and an opportunity was thus afforded of observing the manner in which the opening in the cranium was closed. The shape of the opening was an irregular triangle with rounded angles, two inches and a half in its longest diameter, and two in its shortest. The external table of bone was rounded off at the margin of the opening, and the internal, which extended beyond it, remained sharp at its edge, from which a strong tense membrane stretched across the opening and closed it up. This membrane was evidently composed of the pericranium and dura mater, which could be raised from their respective surfaces, and traced as far as the margin of the opening, where they closely adhered to each other ; its external surface was rough and shreddy from adhesions to the scalp ; the internal smooth and shining ; near the centre of the latter surface there was a circular depression of the size of a five cent piece, with rounded edges, that appeared as though there had been a loss of substance in the dura mater. At this point the convolutions adhered by means of the arachnoid membrane, which was thickened. There were no bony deposits between the layers of the closing membrane.

Case II. — *Fracture of the skull; trephine; recovery.*

Henry Tupper, aged 16 years, of robust constitution, born in Albany, was admitted in the evening of Sept. 19th, 1837, into Ward No. 3 of the Marine Department. Early in the afternoon of the same day, a block had fallen on his head from a sloop's mast, a height of about 40 feet, by which he was stunned and rendered senseless for awhile; he had vomited several times, and been bled from the arm before his removal to the hospital. On admission he was able to walk from the front gate to the ward. Above the forehead on the right side, there was a circumscribed oval swelling of about three inches in length, and two in breadth, with a soft quaggy condition of the parts, that allowed the finger to be buried below the surface of the cranium, attended with severe pain in the anterior part of the head. His intellect was clear, pulse weak and faltering, and extremities cold; there was no coma or paralysis. External warmth was applied, and warm cordial drinks administered. Two hours later in the evening, the pulse became more steady, and the temperature of the extremities was restored; the pain in the forehead had become so acute as to extort cries. At a consultation of the surgeons, it was determined to make an explorative incision of the scalp to ascertain the extent of the injury, and if necessary, apply the trephine. A crucial incision was made into the contused part, and the surface of the cranium exposed by dissecting up the angles of the incision. A fracture was found with three or four depressed fragments forming an oval hollow two lines in depth, and two inches in length. The trephine was applied at its upper margin — and on removing the bony circle, a considerable quantity of arterial blood flowed from between the cranium and dura mater, which were separated from each other as far as the finger could reach. The fragments were so firmly locked together that they could be elevated but very little; blood continued to flow freely from the cranium during the operation, and the pain in his forehead ceased. Three limbs of the crucial incision were brought together by as many sutures; and the fourth and most dependent, left open to allow free egress to the blood. Lint and adhesive straps completed the dressings. Calomel gr. x. with Pulv. Antim. gr. ij. were given, and early the following morning the compound infusion of senna.

The day following the operation, blood continued to ooze in considerable quantity from the wound, and he remained free from pain in the head.

Irritability of stomach and vomiting occurred, but ceased at evening after the free evacuation of his bowels, and the use of effervescing draughts.

The second day. Erysipelas appeared on the forehead and right upper eyelid and afterwards spread over the whole face, accompanied with pain in the forehead. A dozen leeches were applied to each temple, and he took Spirits of Mindererus a tablespoonful every two hours, with a solution of Cream of Tartar pro potu. The sutures were removed from the wound, the edges remaining in contact.

The third day. Hemorrhage from within the cranium occurred and broke up the adhesions of the wound. Moderate pressure, with lint and adhesive straps, arrested it. No further unfavourable accident occurred; and by the thirteenth day healthy suppuration was established. The separation between the cranium and dura mater continued for some time, and pus flowed from this space when the head was inclined to the left side. A small portion of the outer table of the skull exfoliated during the further progress of the case, which terminated very favourably, and the patient was discharged in the month of November following.

Case III.— Wound of the head; trephine; fatal termination.

July 31st, 1839. Frederick Witsell, aged 37 years, a baker, of intemperate habits, was admitted into Ward No. 2, early in the morning, in a state of complete insensibility. From the persons that accompanied him it was ascertained that he had received a short time before, while in a state of intoxication, several blows upon the head with a hatchet, and had been pushed so as to fall with great force upon the pavement. No signs of consciousness could be elicited, the right pupil was dilated, and respiration accompanied with heaving of the chest, and occasional spasmodic action of the diaphragm. On the left side of the occipital region was a lacerated wound of the scalp extending to the periosteum, three-fourths of an inch in length. At an inch and a half from it towards the median line, there were two other smaller wounds more superficial, and not involving the whole thickness of the scalp; the largest of these wounds was dilated, in order to ascertain fully the state of the cranium beneath. No fracture or depression was detected, nor were any signs of sensibility manifested during the examination. His pulse was regular, and somewhat accelerated. About five hours later in the day, no change having taken place for the better, and his condition being regarded as desperate, it was determined to apply the trephine to the seat of the wound. No extravasation was found between the cranium and dura mater, nor was any found beneath this membrane on opening into it by a T. incision. The patient gave no signs of sensibility during the operation, the spasmodic action of the diaphragm ceased for awhile, but returned after he was carried back to his ward.

He continued insensible till within twenty-four hours of death, when he was able to say a few words to his wife. The right eye was paralyzed and closed, the limbs of the left side were also paralyzed, and the head drawn to the right; he could see, however, with the left eye, and move the right limbs, and was able to swallow; his pulse grew more frequent to the last, and he died August 3d, at midnight.

Dissection. The entire right hemisphere of the cerebrum was covered with a coagulum of blood nearly half an inch thick, and within the dura mater. The whole surface of the cerebellum, its left as well as its right hemisphere, was also covered with a coagulum of the thickness of half a dollar. The substance of the cerebrum and cerebellum presented nothing abnormal in colour or consistence; there was no fracture of the cranium.

Case IV.— Convulsions following an old injury of the head; cured by the application of the trephine.[*]

August 22d, 1839. In company with the above named gentlemen, I visited Mrs. McD. aged 35 years, a person in humble circumstances, who was then recovering from a severe attack of convulsions, for which it had been necessary to employ the most active depleting means. She was pale and feeble, but able to sit up, and had been confined for several weeks. Upon careful inquiry, the following particulars of her case were ascertained. Three years previous, while living in the city of New-York, she received a blow in the middle of the forehead from a stone, which stunned her for a short time. On recovering her senses, vomiting came on and continued for several hours. Two or three days after the injury, Dr. Mott saw her and removed two small portions of bone. The wound continued to suppurate for several months afterwards and then healed up. About eighteen months after the accident, she was attacked with convulsions, when far advanced in pregnancy with her third child. Bloodletting, with other depleting remedies relieved her, so that she recovered her usual health and went her full time. After a respite of several months she was attacked a second time, and relieved by the same means. She was now recovering from the third attack, which had been more violent and protracted than either of the preceding; during the interval that had elapsed between it and the second attack, she had several times suffered from threatening symptoms, such as flushed face, drowsiness, and torpor, of which she had been relieved by bloodletting. She never suffered from headache, nor referred any uneasy sensations to the seat of the wound. During the attacks, her face and all her limbs were alike convulsed. She was evidently agitated by our visit, and her recollection confused; with the assistance of her husband however, she was able to make out the order of different occurrences. The cicatrix upon her forehead presented the following appearances: it was an inch and a half in length, in the form of a narrow furrow, with its upper half lying in the median line, and its lower a little to the left of it, and terminating at the eyebrow; it was one third of an inch in width, one fourth in depth at its upper half, growing more shallow towards its lower extremity; there was evidently a loss of a portion of the external table of the skull, and the cicatrix of the skin was closely adherent to the bottom of the furrow. The parts were free from tenderness or pain. The patient as well as her husband, were exceedingly anxious for relief, and willing any operation should be performed that afforded a prospect of benefit.

Our opinion concurring in favour of trephining, Dr. Fuller proceeded to perform the operation. A semi-lunar incision was made across the forehead, with its convexity directed downwards, intersecting the cicatrix near its inferior extremity, and extending an inch on either side of it. From the middle of this, a second incision, two inches in length, ascended along the median line: the angles were dissected up, and the periosteum detached from the bone. The first application of the trephine, included about half an inch of the upper extremity of the furrow, and the disc removed appeared to be of unusual thickness, owing to increased deposit of osseous matter upon its inner surface. A second disc was removed, joining the first at its lower edge, and including the remainder of the furrow; the thickness of this disc exceeded that of the first, and was nearly half an inch. It was perforated by a foramen that transmitted a vein from the scalp to the sinus; the surface of the dura mater exposed was of a normal appearance. A moderate oozing of blood took place during the operation; but no ligatures were necessary. A single suture secured the angles of the wound in their proper situations, and the edges were kept in contact by adhesive straps. Compresses of lint, secured by long adhesive straps, completed the dressing. The patient after the operation, expressed satisfaction at the relief it had afforded; her head, she said, felt altogether differently from what it had before. The wound healed kindly by the first intention, and in about a fortnight she resumed her accustomed occupations.

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[*] This case occurred in the practice of Dr. A. Welch of Wethersfield, Connecticut, through whose courtesy I was invited to see it, and with whose approbation, as well as that of Dr. Fuller of Hartford, who performed the operation, it is now made public.

August 31st, 1840. This patient has continued to enjoy good health, without any return of convulsions; though once or twice she has had some threatening indications, which Dr. Welch has relieved by seasonable treatment.

INJURIES OF THE SPINE.

Case V.— Fracture of the fourth and fifth cervical vertebræ. Softening of the medulla spinalis.

James Crowles, seaman, of large athletic frame, born in Scotland, aged 23 years, fell from a height of about 20 feet, and struck the back of his neck upon an anchor, which rendered him insensible for a short time. Sixteen ounces of blood were drawn from his arm, after which he was brought to the hospital, (July 26th, 1839,) when his condition was as follows. His intellect was clear, his lower limbs were in a state of complete paralysis; his upper limbs only partially paralyzed, the forearms being susceptible of flexion; the right, however, to a greater degree than the left. He had priapism, and retention of urine, as well as involuntary fœcal evacuations. The skin was hot, the pulse weak and frequent, and the tongue parched with thirst. No external mark of injury of the neck was visible; there was neither swelling nor discolouration, but great tenderness on pressure, over the fourth and fifth spinous processes, as well as pain on motion. The urine was drawed off with a catheter, and a seidlitz powder given every two hours.

July 27th. He passed a restless night, and has had frequent involuntary stools; he had been delirious, but became rational towards morning. Respiration is performed by the diaphragm, without motion of the ribs, but with apparent facility, 32 per minute ; pulse 80. There is ecchymosis of the right eyelids and of the conjunctiva bulbi. A cooling lotion to be applied to the head.

28th. Priapism continued till last evening ; he has more power of motion in the upper limbs, and some returning sensation in the lower, to a greater degree in the right than in the left ; has passed his urine without assistance this morning, but his fœces still escape involuntarily ; he complains of pain between the shoulders, his pulse is soft, and respiration is performed with some motion of the ribs. These signs of amendment continued till towards evening, when delirium came on, and respiration became laboured and entirely diaphragmatic ; frothy saliva was ejected from the mouth, the eyes were fixed, and turned upwards, the vessels of the sclerotica injected, the pupils movable, and the expression of the countenance idiotic. His pulse was tense and hard, and rose to 100, accompanied with increased heat of the head. Eight ounces of blood drawn from the arm reduced the pulse ; the temporal artery was opened, but without affecting the symptoms ; he died in about six hours, his mouth being previously drawn to the right side.

Dissection. Extravasated blood was found beneath the scalp, on the top of the head. The cerebrum and cerebellum, with their investing membranes, were of a normal appearance. The occipital fossæ, and upper part of the medullary canal were filled with serous fluid. On laying bare the spinous processes of the cervical vertebræ, those of the fourth and fifth were found fractured, and forced in upon the cord ; the tranverse processes of the same vertebræ were also broken into several fragments, and the surrounding cellular and muscular tissues infiltrated with blood. The sheath was entire, but that portion of the cord beneath the fractured parts, was softened into a pulpy mass, resembling thick chocolate, that flowed out on cutting into the sheath. Above and below the fractured vertebræ, the cord was healthy and firm, and the third and sixth vertebræ were sound. The examination extended to no other organs.

Case VI.—Supposed fracture of the fourth cervical vertebra ; recovery.

Peter Gilman, laborer, born in Ireland, aged 26 years, of robust constitution and temperate habits, was admitted into the New-York Hospital with injury at the nape of the neck. On the 4th of December, 1839, he was suddenly thrown from his cart, while riding over rough ground, and struck with violence upon the back of his neck, that caused an immediate loss of the use of his arms. He raised himself, however, to a sitting posture, and with the assistance of another person, stood up and walked a short distance, when complaining of weakness, he was put upon a cart and conveyed home. On the way, he entirely lost the use of his right leg, and in part, that of his left. The second day following, this also became powerless like the other. Since the accident, his urine has been drawn off at stated intervals, and his fœces been voided involuntarily. He has been bled, blistered, and purged. On admission, the sixth day after the accident, his condition was as follows : No irregularity of the spinous processes of the cervical vertebræ could be felt, nor was any external sign of injury visible on the nape of the neck. Pressure, however, upon the spinous process of the fourth vertebra caused severe pains, that, he said, extended to the fingers and toes· Bending the head forward has the same effect, while rotating it gave him no pain. Paralysis of the lower limbs was complete. He was still able to raise his arm to a certain extent, with a sort of dangling motion, but could not extend the forearm, or flex the fingers; sensation was not impaired. Respiration was calm and easy, and performed without motion of the ribs or concurrence of the abdominal muscles. He was exceedingly restless, requiring his position to be changed every few minutes; his pulse were 64 and good. The urine drawn off at stated intervals was somewhat turbid, but without albuminous deposit; his fœcal evacuations were involuntary. Cups to be applied to the nape of the neck.

December 31st. Some improvement had taken place in his symptoms, he had become tranquil, and his general condition quite favourable. It was no longer necessary to use a catheter; by the aid of pressure with the hand above the pubes, the bladder could be evacuated. There were at times spasmodic twitchings in his lower limbs by which they were drawn up, but he had no control over them by any act of volition.

My attendance ceasing at this date, the patient passed into the hands of my colleague, Dr. Watson, from whom I have obtained the following particulars:

A gradual improvement in all his symptoms continued, so that in the month of May following, he was able to walk about with the aid of crutches, and to pass his fœces and urine in the natural manner. A seton was kept open on the nape of the neck, and frictions with stimulating liniment employed daily, over the body and limbs. At the time of his discharge, in the following month, he was able to walk with a cane only, and was continuing to gain gradually.

Case VII.—Fracture of the second lumbar vertebra, without paralysis.

This case, as well as the following, is interesting, from the circumstance that there was no paralysis, although fracture of the vertebra existed.

Daniel Wilson, born in Wales, aged about 37 years, of very intemperate habits, was admitted into the hospital in a state of delirium tremens, which continued several days, until 24 hours before death. Nothing could be ascertained respecting the nature of the injury he had received, nor was its extent suspected until he recovered his reason sufficiently to make it known himself, when it was ascertained that several days before his admission, he had jumped from a garret window 40 feet in height, in a fit of delirium. His right foot and ankle bore marks of contusion, and the extremity of the fibula was broken off. Before he regained his reason, it was impossible to keep him in bed; he was constantly going about the premises. After this, however, he began to complain of great pain, and soreness in moving his body, and as he lay in bed, his head was thrown far back. On examining his back, the spinous process of the second lumbar vertebra presented an angular projection; pressure upon it gave no pain, nor did paralysis exist.

On dissection, blood was found extravasated between the folds of the mesentery and into the muscular and cellular tissue, covering the lumbar vertebræ. The body of the second vertebra was broken into fragments, the first and third were uninjured; the membranous sheath, as well as the enclosed cord, were sound.

Case VIII.—Fracture of the skull, and of the second lumbar vertebra; without paralysis.

Q. D., was admitted December 20th, 1839, into Ward No. 4, of the Marine Department. He had been knocked down in the evening by a carriage running against him. Several contusions of the scalp existed, besides a deep wound of an inch in length, in the axilla, from which there was but little hemorrhage. The following morning, having recovered from intoxication, he complained chiefly of his back, and referred his pain to the lumbar vertebræ. There was no appearance of external injury or displacement; pressure did not much increase the pain. He was able to move in any direction, and even walked about the ward till the day he died; his face was flushed, and at times he was delirious. He was exceedingly averse to allow any thing to be done for him. At 11 o'clock, the third night after the injury, he was seized with a fit, and five hours after died.

Dissection. There was a crack in the skull running from the vertex on the left side to the foramen magnum. The whole surface of the right hemisphere of the cerebrum was covered with a layer of coagulated blood, thickest over the inferior surface of the middle lobe, where the convolutions were softened into a pultaceous mass. The veins of the pia mater upon both hemispheres were loaded with blood. The second lumbar vertebra was fractured across its body. The anterior vertebral ligaments remained entire, excepting on the left side, where a small spicula of bone had obtruded. The cellular and muscular tissues around were infiltrated with extravasated blood.

*Case IX.—Lesion of the Spinal Cord from a gun-shot wound; paralysis; recovery.**

On the 3d of February, 1839, Josephine ———, a German girl, residing as a domestic at No. — Fulton street, was shot with a pistol by a man boarding in the house, who immediately after blew out his own brains. She was standing leaning forward, when the ball entered her left side, between the ribs and margin of the os innominatum, four or five inches from the spine, and she instantly fell to the floor. Very little hemorrhage followed the wound. About an hour after the occurrence, when I first saw her, she was suffering intense pain in the region of the os sacrum and coccyx and in both the lower limbs, which were paralyzed. She was exceedingly restless, tossing in bed; her countenance was pale and anxious; her skin was cool, pulse weak and frequent. The wound, of the size of a cent piece, did not allow a probe to be passed more than an inch in depth, the position of the parts being changed from what it was at the moment the wound was inflicted.

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* This case occurred out of the hospital, and was attended in connection with Doctors Naudin and Bigelow.

An emollient poultice was applied to the wound, and brandy with laudanum freely administered.

At evening she vomited, and reaction came on; the temperature of the surface rose; the lower limbs were painful to the touch, and the abdomen tumid and tender on pressure. Restlessness continued, with intense pain. She was now bled from the arm, and two dozen leeches applied to the abdomen. Introduced a catheter, and drew off the urine, which was mixed with blood. This circumstance seemed to indicate that either the kidney or ureter had been wounded by the ball in its track.

Feb. 4th, (morning.) Patient is more tranquil, but still complains of severe pain in the lower limbs, and cannot bear to have her feet touched; the pains she describes as cutting. The temperature of her skin is natural, pulse frequent; she vomits occasionally; there has been no evacuations from her bowels. Leeches to be applied again to the abdomen, and poultices continued. One ounce of castor oil to be given and to be followed by an enema.

5 o'clock, P. M. The urine drawn off to-day is only slightly tinged with blood; the enemata are not retained; tenderness and swelling of the abdomen have disappeared, but she complains of soreness in the region of the left kidney. There is no pain on pressure of the spinous processes of the lumbar vertebræ. She constantly suffers from cutting pains in the lower limbs; her pulse is frequent, and somewhat tense. Venesection to be repeated, and leeches to be applied over the left kidney; directed to take comp. infus. of senna, and continue the use of tincture of opium, in full doses, every three or four hours.

Feb. 5th. Has passed a comfortable night and slept part of the time; the pains of her lower limbs are less severe: her bowels have been freely evacuated, but without her being able to control them. The urine, to-day, presents quite a natural and healthy appearance. Repeat leeches over the left kidney.

Feb. 9th. Since the last report, the pains in her lower limbs have diminished in severity, and she has passed comfortable nights; she has been able, at intervals, to rotate the lower limbs a little. Anodynes have been administered freely to allay pain and irritation. Laxatives, and poultices over the region of the left kidney, have constituted the treatment. There is but little suppuration from the wound.

Feb. 15th. Of late she has complained most of pains in her feet, which have been mitigated by extract of stramonium applied about the ankles. She is able to rotate the left leg, and raise it a little from the bed.

Feb. 19th. Yesterday a small blister was applied to the calf of the right leg, and has had the effect of aggravating the pains very much, so that the contact of the bed-cover causes intense suffering. Directed to apply to the blistered surface, a poultice coated with ungt. stramonii, and the extract of stramonium freely over the surface of both limbs. She continues to take laudanum freely, according to the severity of the pains.

March 16th. There has been a gradual improvement since the last report. For about three weeks past she has been able to control the evacuation of her fœces, and for the last three days that of her urine. She still suffers at times severe pains in both her limbs, the pain of the left being most severe at the upper part of the thigh and hip, and that of the right, on the contrary, at the foot. There has been very little suppuration from the wound. Her general health has improved, and she is able to sit up in bed a short time every day. About this date she was removed to her parents' residence, between two and three miles from the city, where she continued to improve gradually, and recover the use of her lower limbs.

On the 16th day of October following, Josephine called at my residence. She had walked from her father's house, and expected to walk back. Her general health was good, and there was no halt in her gait. The ball had not shown itself, and the wound had been healed for some time. She still suffered occasionally from pains in her left hip and foot.

Case X.—Immobility of the lower jaw; division of the masseter muscle of the right side.

John Bishop, seaman, aged 19, born in Georgetown, D. C. About 18 months before his admission to the New-York Hospital, he had had an attack of fever at the south, during which he was profusely salivated, and sloughing of the right cheek had occurred, with loss of considerable portions of the soft parts from the inside of the mouth. On recovery, he was unable to open his mouth, a band having formed, by which the jaws were kept firmly applied to each other. Unsuccessful attempts had been made to relieve this condition by dividing the constricting band, but without using means, at the same time, to force the jaws apart. Two portions of bone had been discharged.

On the 19th of August, 1839, when an operation was performed for the purpose of restoring the functions of the lower jaw, the parts presented the following appearances:

The right cheek was full and swollen, the skin and subcutaneous cellular tissue supple and movable upon the masseter muscle, which could be felt contracting under the hand, whenever he put it in action. In a state of rest, this muscle felt hard and tense. On the inside of the cheek, a firm callous band extended from above the interval between the first and second upper molar teeth on the outside, to below the first molar tooth of the lower jaw, with a sharp unyielding edge, that would not permit the end of the finger to be insinuated between it and the outer surface of the teeth. The jaw was susceptible of a sliding motion, showing that the right temporo-maxiliary articulation was movable. The upper dental arch stood a little in advance of the lower, barely allowing the blade of a table knife to be introduced between them. His voice was very little affected. He was able to take solid food by cutting it very fine, and insinuating it between the upper and lower teeth. His general health was pretty good, and he had observed no change in the condition of his jaw for a year past.

Operation.—A bandage of two fingers' breadth, and sixteen inches in length, was insinuated between the upper and lower teeth, and the ends tied so as to form a loop below the chin. One assistant held the head firmly, while another acted on the lower jaw, by means of the bandage, bearing down so as to put the band to be divided as much on the stretch as possible. The fore finger of the left hand was then introduced under the cheek, and the nail insinuated between the edge of the callous bridle and the molar teeth, to serve as a guide for the knife. A narrow bladed scalpel was employed, care being taken to avoid cutting near the middle of the masseter muscle, in order not to involve the parotid duct. Successive incisions from within outwards, and advancing from before backwards, guided by the sense of touch alone, were made on a level with the lower molar teeth, until the finger arrived at the last tooth; resisting bands were felt still farther back and were divided. By repeated attempts with instruments that acted as levers in prying the teeth apart, sufficient space was obtained to introduce the speculum oris, which acted with great effect in rupturing the fibres which still bound the jaws together. Proceeding cautiously, in this manner, alternately prying and dividing the resisting bands, the jaws were separated so as to allow two fingers to be placed edgewise between the incisor teeth. The whole width of the masseter muscle was involved in the incision, and in some parts its whole thickness; the knife grating as if cutting through cartilage; the hemorrhage was moderate, and ceased spontaneously. After the operation, the patient could himself open his mouth to the extent to which the teeth had been separated. A denuded bony surface was felt on the outside, a little behind the last molar tooth, and could be traced upwards to a rough pointed extremity, which was somewhat movable. A wooden wedge was introduced between the molar teeth of the opposite side, and required to be kept in as much of the time as it was possible for him to bear it. Considerable swelling and inflammation succeeded, the following day, and continued for some time. The use of the wedge was persevered in.

Sept. 9th. He could chew all kinds of food and separate his teeth nearly an inch apart; with the wedge they could be separated still farther. The wound on the inside of the cheek is nearly healed; there is evidently a tendency to a reproduction of the same condition. A band is felt at the edge of the masseter, when the parts are put on the stretch, resisting the farther separation of the jaws. He is himself sensible of their contracting. Introduced the speculum, and stretched the parts, and then substituted a thicker wedge, to be kept in as much as possible.

Oct. 1. For a few days past the patient has used the speculum several times daily, for the purpose of stretching the parts which have still a great tendency to contract, and it produced a very good effect. By way of experiment, the jaws were left to themselves for twenty-four hours, when it was found that the thumb could scarcely be introduced edgewise between the teeth.

Nov. 6th. Since the last report the same treatment has been continued Some of the newly formed bands have been divided. The patient has himself removed a portion of bone, which proved to be the extremity of the coraciod process about three-fourths of an inch in length; he is now employed as nurse and is left to use the speculum at discretion.

March 31st, 1840. For several weeks past he has entirely discontinued the use of the speculum, and the parts have been left to themselves; his condition is as follows. The right cheek is much less swollen than it was before the operation, and is soft and supple; the masseter muscle feels hard. The forefinger can be introduced edgewise between the incisor teeth, and within these limits he has free use of the jaw, and perceives no tendency to farther contraction. The callous band on the inside of the cheek, exists very much in the same condition as before the operation, excepting that it does not advance as far forward.

May 30th. He continues to enjoy the same use of the jaw as at the last report. A loose portion of bone is felt opposite to the upper molar teeth, and will require to be removed.

Case XI. — Gun-shot wound; amputation at the shoulder-joint.

David Jarvis, boatman, aged 19, born on Long Island, was admitted Tuesday afternoon Oct. 15th, 1839. Early in the morning of the same day, while in the act of taking a loaded gun from the cabin of a vessel, it accidently went off as he held it by the barrel in such a position that the whole charge traversed his right arm, about the insertion of the deltoid muscle; the bone was shattered, and the soft parts lacerated in a most shocking manner. The hemorrhage was very profuse for a while, but ceased spontaneously without causing syncope. The vessel being at anchor at the time, and no medical aid within reach, all possible despatch was used to get him to the city. On admission to the Hospital his condition was as follows.

His countenance pale, and expressive of great exhaustion; pulse frequent and feeble, and extremities cold; he complained of constant thirst, and had drank a great deal of cold water during the day. No dressing whatever had been applied to the wound; the arm remained united to the shoulder by two narrow bands of soft parts between which the discharge seemed to have passed. One of the bands on the anterior and outer part of the arm consisted only of a narrow strip of integument, the other at the posterior or inner part, besides a band of skin of three fingers width, and a portion of muscle, contained the trunks of the nerves and blood-vessels, which had happily escaped injury. About three inches of the upper extremity of the os humeri remained in situ. Its shattered end protruded beyond; the lacerated muscles was drawn towards the trunk by the pectoralis major; it was movable in every direction without crepitus, showing that the joint remained sound. The pulse was felt beating at the wrist, and the fingers could be flexed. The laceration of the integuments extended on the inside as high up as the edge of the pectoralis major muscle.

As soon as the surgeons of the hospital could be convened, amputation was performed at the shoulder-joint in the following manner. With a large sized scalpel an incision was made of a semi-lunar form, with its convexity pointing downwards, and extending across the deltoid muscle from its anterior edge to a point a little below and behind the acromion process, and falling about half an inch within the ragged margin of the lacerated skin. The deltoid muscle was divided and dissected up, so as to expose the capsular ligament at its outer and upper half, which being put upon the stretch by bringing the fragment of bone down close to the trunk, was opened, and the head of the bone turned out. Continuing the dissection close to the inner and posterior surface of the neck of the bone, this fragment was detached, thus affording a better opportunity to shape the second flap out of the ragged and confused mass of soft parts on the inside of the arm, which was done with an amputating knife in a line parallel with the margin of the outer flap. In the course of this incision, the axillary artery was divided and secured by a ligature; it had been compressed during the operation by an assistant, between his thumb introduced into the wound high up in the axilla, and his fingers applied on the outside. It was still necessary to trim away considerable portions of ragged muscle from the inner flap in order to obtain an even surface that would be more favourable for union on being brought into contact with the outer flap. The axillary artery was the only vessel to which a ligature was applied; a vessel on the outer side of the neck of the bone that bled pretty freely at the beginning of the operation, could not be detected on searching for it afterwards. Only a small quantity of blood was lost. The dressing was deferred for three hours; and during this time, a napkin wrung out in cold water was applied to the wound. The patient was still further exhausted by the operation, and his pulse became very weak. During the three subsequent hours, he vomited several times, owing, in part, no doubt to the stomach's having been fatigued by copious potations since the accident.

At the time of the dressing there had been but little oozing, and the surface of the wound was coated with a thin layer of coagulated blood. The flaps were susceptible of pretty accurate adaptation, and were kept in contact by long strips of adhesive plaster reaching some distance upon the back and chest. Compresses of lint were laid on either side of, and parallel with the edges of the flaps, to make pressure and to support them more effectually in contact. A sling bandage with six tails completed the dressings. He was ordered to take Tinct. Opii ʒi. Aqua Menth. pip. ℥ss. statim, and two grains of carbonate of ammonia in solution every three hours through the night; drinks to be allowed him in very small quantities.

He passed a comfortable night without any recurrence of vomiting; in the morning it became necessary to draw off his urine with a catheter, after which the bladder relieved itself spontaneously. Reaction was well established in the course of the day, and the subsequent progress of his case was favourable. Only a small portion of the wound united by the first intention; and though a copious suppuration succeeded, his strength was well sustained. The ligature came away on the twelfth day; the parts cicatrised kindly, forming a good stump; and in the month of January following, he was discharged cured.

Case XII.— Wound of the brachial artery; ligature.

Charles Thomas, boatman, aged 23, born in Maryland, was admitted to the Hospital November 25th, 1839, at 10 o'clock in the forenoon, with a wound in the left arm near the elbow, received the evening previous while standing in a crowd. The hemorrhage that followed instantly filled his coat sleeve, but was soon controlled by a handkerchief bound tight around the arm above. On attempting to walk home, he became so weak that he had to be carried. A physician who soon came to his aid, removed the handkerchief; and finding the hemorrhage did not recur, dressed the wound and applied a bandage moderately tight around the arm. Three hours afterwards the hemorrhage returned, and was again arrested in the same manner till the physician could be obtained. The edges of the wound were now brought together by adhesive straps, and a very tight bandage applied; which commanded the hemorrhage for several hours, but caused the limb to swell very much. About four o'clock in the morning, a third hemorrhage occurred, and was checked again as before, the handkerchief being left on the arm two hours, and then removed. On admission to the hospital, his condition was as follows: His countenance was pale, and his pulse very feeble; his left arm was bent at an obtuse angle, and very much swollen from the hand to the shoulder; its temperature was cool below the elbow, and the pulsations at the left wrist, weaker than at the right. A tight bandage remained on the arm above the elbow, saturated with florid blood, which, on being removed, allowed a smart jet of blood to escape from the wound, that ceased on keeping up pressure for a short time with the thumb. The circumference at its middle was thirteen and a half inches, while that of the other arm was ten and a half. The swelling was uniformly tender and firm, and so diffused as to efface all the outlines of the muscles. No pulsation was perceptible at the elbow, nor above it, excepting high up in the axilla. The wound was an inch in length, and extended transversely across the posterior surface of the arm at four fingers breadth distance above the olecranon, and a little to the ulnar side of the axis of the limb; its edges were tense and unyielding, and prevented exploration with the finger. A longitudinal incision of the skin and fascia was therefore made, extending an inch above and below the wound, and intersecting it at right angles. It was now ascertained that the triceps muscle was divided in its whole thickness, and the wound extended deep toward the inner side of the arm. Hemorrhage not recurring, a pledget of lint was placed over the wound, and a roller loosely applied. At four o'clock in the afternoon, when a consultation of the surgeons was held, the aspect of the patient had improved; his limb was easier, the swelling of the forearm had diminished; that of the arm remained the same; its temperature was natural; he complained of numbness of the thumb, and first and second fingers. Doubts being entertained of the wound's involving the trunk of the brachial artery, it was decided to wait the recurrence of hemorrhage before resorting to an operation. In the meantime, the limb was to be kept wet with a solution of muriate of ammonia; absolute rest, with low diet were enjoined, and the patient was to be closely watched. He passed the first night comfortably, but the following day was attacked with a rigour in the forenoon, succeeded by febrile reaction, accompanied with thirst, and increased heat towards evening. Between four and five o'clock the second morning, after an interval of 48 hours, hemorrhage occurred a fourth time without any exciting cause; and before a tight band could be applied round the upper part of the arm, a considerable quantity of blood was lost. The bandage caused immediate and severe pain, extending from the wound to the thumb, index, and middle fingers, and the radial side of the ring finger, (parts supplied by the median nerve,) and after awhile it had to be removed, the hemorrhage having entirely ceased. A consultation was held at ten o'clock, when the patient was exceedingly pale and weak, the lips bloodless, the countenance presenting the peculiar expression observed in cases of profuse hemorrhage. His voice was reduced to a whisper. No time was now lost in resorting to an operation, which was performed as follows. The arm being extended at right angles to the trunk, and supported over the edge of a table, an incision was made from below upwards, in the direction of a line drawn from the middle of the elbow to the middle of the axilla, commencing three fingers breadth above the inner condyle of the humerus, and extending three inches in length. After dividing the skin, successive layers of adipose and cellular tissue infiltrated with blood were cautiously incised, and the internal cutaneous nerve brought to view; turning it to the inside, the dissection was continued deeper in the same manner, with the aid of a grooved director; and after dividing the aponeurosis, the ulnar nerve was exposed, and soon after the median, which, from the proximity of the artery on its posterior and inner side, received an impulse that gave it the appearance of being the vessel itself: with an eyed probe the artery was insulated, and its identity being put beyond a doubt, a ligature was passed round it and tied. A longitudinal incision was next made into the artery below the ligature, and a probe passed along it, to discover, if possible, the wound of the vessel, with a view of applying a ligature beyond it. Nothing could be ascertained in this way, and the operation having already been unavoidably tedious, and caused great suffering to the patient, it was thought best to abandon the design, and rely upon a single ligature rather than protract his suffering in the exhausted condition in which he was. A second ligature was therefore applied below the incision, and the artery divided between the ligatures. All the tissues were obscured by being infiltrated with blood; none however flowed from the incisions, excepting what came from a divided vein. No attempt was made to approximate the edges of the wound which gaped widely apart; it was filled with lint, and a roller applied.

The pain during the operation was confined mostly to the parts supplied by the median nerve; the temperature of the hand and forearm was reduced, and the pulse ceased at the wrist. The arm was placed on a pillow, and enveloped in cotton bats. He was ordered to take a portion of warm wine sangaree, and a draught containing xxv. drops of Sol. Sulph. Morphine.

The same evening reaction was established, his countenance improved, and his voice became firmer. In the subsequent progress of the case, sloughing of the subcutaneous cellular tissue took place, and rendered it necessary to make extensive incisions along the course of the biceps muscle. The ligatures came away on the fourteenth day, and after remaining several weeks longer in the hospital, during which he steadily improved, he was discharged at his own urgent request, before the sores upon his arm had entirely healed. He continued to suffer from numbness in the fingers supplied by the median nerve.

Case XIII.—Exostosis on the upper surface of the last phalanx of the great toe, cured by excision.

William Jewell, a seaman, born in Norway, aged 20 years, of robust and healthy constitution, first noticed this disease, for which he sought relief, about 14 months prior to the 25th September, 1839, the date of his admission to the hospital. At that time, after walking a great deal in a pair of tight new boots, he observed a small hard lump growing under the edge of the nail of the left great toe; by keeping it paired down close, he suffered little inconvenience. It had been partially excised, together with a portion of the nail, but had grown out soon after. At the time of the operation, to be now described, the toe presented the following appearances: From beneath the anterior edge of the nail, which was cut very short, a small tumour of the size of a split pea protruded, of a reddish gray colour and tough firm consistence, but not apparently bony at its apex. It gave him no pain, excepting when he neglected the precaution of wearing an easy shoe. From the situation of the apex at the anterior edge of the nail, I supposed its base did not extend so far back as to make the removal of the whole nail necessary, and therefore proceeded, with the view of saving the matrix of the nail. After having been previously softened in hot water, and scraped thin, an incision was made across the nail with a straight narrow bistoury, a line and a half anterior to its root, and carried perpendicular to the surface of the bone beneath. Instead of reaching beyond the base of the tumour, as was intended, the knife passed into it. It was, therefore, necessary to repeat the incision at a more remote point, which was done in the same manner, two lines beyond the root of the nail, so as to include the matrix. On coming down upon the bone, the edge of the bistoury was directed forward, and made to graze its surface, thus including the nail, with the tumour at its origin. Its bony nature was obvious in cutting through its base, where the knife met with very great resistance. The surface from which it grew was shaved down, below the surrounding bone, until it had a healthy appearance. The resistance of the nail, perhaps, had determined the growth of the tumour forwards, by which I was led to the opinion that it took its origin nearer the extremity of the phalanx. There was very little hemorrhage, and the wound healed kindly under the application of simple dressings, and nitrate of silver occasionally, to repress the exuberant granulations. There was no tendency to a reproduction of the diseased growth at the time of his discharge, October 21st, 1839.

Case XIV.—Retention of urine from injury; puncture of the bladder per rectum.

N. P. an Italian sailor, 18 years of age, was admitted to the hospital, October 2d, 1839, with fracture of the left thigh, caused by a fall from a vessel's yard-arm to the deck. Symptoms of injury of the urethra were also manifest, such as blood dribbling from the penis, and inability to make water, except in small quantities. There were, however, no external marks of injury, nor tenderness on pressure over the perineum. An instrument passed along the urethra, till it was arrested at the membranous portion, by spasmodic contractions, and could not be advanced beyond it. Efforts to expel his urine, at the moment of withdrawing the instrument, procured a discharge of about two or three ounces, and afforded partial and temporary relief. Up to the evening of the fourth day, the patient was kept in a pretty comfortable state by the use of an instrument in the manner described, and the constant application of hot poultices to the hypogastric region. The relief, however, was becoming less effectual, from the increasing irritability of the urethra, and the distended bladder reached almost to the umbilicus. With this alarming condition of the urinary organs, there was a very remarkable absence of constitutional disturbance. There was no fever, and but little acceleration of the pulse. A moderate degree of tenderness, on pressure over the hypograstic region, existed, and only an occasional inclination to make water, accompanied by efforts that did not cause much pain.

More active means were now resorted to. The muriated tincture of iron was given, at first fifteen drops every quarter of an hour, until four doses were taken, when it was increased to half a teaspoonful every ten minutes, until six were taken, after which he began to vomit, but without procuring relief. Sixteen ounces of blood were drawn from the arm as he sat up in bed, and caused incipient syncope, after which he passed a little more than an ounce of urine; the greatest discharge obtained for twelve hours. The condition of his left thigh precluded the use of the hot bath, and opium was next had recourse to. A drachm of laudanum in an enema was first administered per anum, and half a drachm by the stomach every hour after, through the remainder of the night. On the morning of the fifth day no relief having been obtained, it was not thought safe to delay any longer puncturing the bladder. It reached as high as the umbilicus, presenting a tense circumscribed tumour as well defined as the gravid uterus; the pulse was more accelerated, being about 100, his countenance, however, was calm, and he suffered but little from efforts to make water. After the bowels had been evacuated by a laxative enema, I proceeded to puncture the bladder per anum, considering this operation preferable to that above the pubes; and the fracture of the thigh precluding the possibility of that per perineum. The index finger of the left hand introduced per anum, encountered the fundus of the bladder encroaching upon the rectum. The extremity of the finger was placed in the median line, a little beyond the posterior edge of the prostrate gland, (the point to be punctured,) and served as a guide to a long curved trocar, armed with a canula. Gliding the point of the instrument along the palmar surface of the finger, till it came in contact with the part to be perforated, it was held in this position while the finger was withdrawn; the handle of the trocart was then depressed against the posterior edge of the sphincter ani, at the same time that the point was pushed upwards and forwards, and made to describe a curve as though it were to be brought out through the abdominal parietes midway between the umbilicus and pubes. On withdrawing the trocar the urine gushed through the canula, and continued to flow till more than two quarts were drawn off, to the great satisfaction and relief of the patient, who immediately begged for drink to satisfy his long unquenched thirst, and before stopping he had swallowed a quart of water. The canula was secured in place by a bandage, and left unstopped. Ordered to take a seidlitz powder.

Tuesday, 8th. Second day after the operation. The urine flows freely through the canula. An attempt was made to introduce a catheter of medium size, which passed rather farther than at previous attempts, but gave considerable pain. Unstopping the canula and emptying the bladder, he experienced severe pain at the seat of the stricture; owing probably to the contact of the urine seeking a passage by the natural channel. Directed the canula to be kept stopped; and an emollient poultice to the perineum.

Wednesday, 9th. Has made water twice in the natural way, and freely.

Thursday, 10th. Continues to pass his urine by the natural channel, and with as much facility as in health. Withdrew the canula from the rectum, and found the extremity that had been in the bladder, coated with a thin crust of calculous matter. No urine followed per anum on withdrawing it.

Sunday, 13th. Patient was unable to pass his urine for several hours, and complained of severe pain above the pubes. A catheter was introduced, and gave him much pain; on withdrawing it, however, his urine flowed. No stool for 24 hours past. Explored per rectum, and found an accumulation of fœces, which had irritated the bladder; the cicatrix of the puncture was not tender to the touch. Ordered Ol. Ricini ℥j; infus. semin lini, pro potu; and emollient poultices above the pubes.

The same evening the urine was loaded with thick albuminous matter, the tongue covered with a whitish fur, and the pulse frequent. Ordered one dozen leeches to the perineum, and another dozen above the pubes; the poultices to be continued.

Monday, 14th. He is again unable to pass his water, and suffers much pain in the region of the bladder. An instrument was passed down to the membranous portion of the urethra, and on withdrawing it, relief was obtained by a flow of urine. Directed the same quantity of leeches to be repeated to the perineum and above the pubes. Two drachms of epsom salts, with a seidlitz powder, to be given every four hours. The acute inflammatory symptoms of the bladder, were subdued by these means. The albuminous deposit in the urine continued for several weeks, notwithstanding the use of uva ursi and buchu. It was not until the fractured thigh was sufficiently firm to allow him to use exercise in the open air, that the urine recovered its healthy properties. On the 20th Dec. 1839, he was discharged cured.

Case XV.— Fissure of the rectum; cured by division of the sphincter ani muscle.

Wm. B. Owens, seaman, aged 35, born in New-Jersey, of robust constitution. At the age of eight years he wounded his rectum, by falling from a loaded wagon on the sharp end of a standing corn-stalk; considerable hemorrhage followed, and for two or three weeks he was kept at home from school. Since this accident, his fœces have always been very small in size, so much so, as to have been the subject of remark to others, when he has had occasion to ease himself in the open fields. With this exception his stools have been natural, and unattended with pain or effort in their evacuation.

About five years ago, during the prevalence of cholera at Port Mahon, among the U. S. Ship Delaware's crew, he was suddenly seized, after violent exertions in diving for an anchor, with inclination to go to stool, and evacuated about a pint of black blood ; since that time he has had frequent returns of diarrhœa at longer or shorter intervals, the discharges varying very much in colour, and sometimes streaked with blood, but not attended with much pain.

For three months preceding his admission to the hospital, which was early in September, 1839, he had suffered much from severe pain, continuing for several hours after every stool, accompanied with spasmodic contractions of the sphincter ani muscle. He referred these pains to the verge of the anus, at its posterior part, and a little to the left side, and compared them to the cutting of a knife. He was tormented with frequent desire to go to stool, and the greater the efforts he made, the more violent were the contractions of the sphincter. He would generally have a stool in the morning, consisting of soft fœces that were sometimes figured; this would be followed by slimy mucus, and sometimes by pus, in small quantities. His sufferings were excruciating, commencing with the morning stool, and continuing till three or four o'clock in the afternoon, when the spasm of the sphincter would gradually subside, and leave him easy till the next morning. Exercise aggravated his sufferings, and every discharge of urine was followed by spasm of the sphincter ani. Various remedies had been employed, without relief. The finger introduced per anum, was embraced by the sphincter in a state of spasm, and caused excruciating pain. The patient insisted that nothing was the matter inside the gut, it was only at the entrance. Upon a careful inspection of the parts, the sphincter appeared firmly contracted. On separating the nates, and stretching out the folds at the verge of the anus, an oblong ulcer was brought into view between two of the folds, at the posterior side, and a little to the left of the median line : the longest direction of the sore was in the axis of the gut, and its edges were somewhat thickened. On touching it with my finger, it gave severe pain, and the patient at once recognised it as the seat of all his sufferings. There was no appearance of hemorrhoids, or any other disease.

Operation performed 25th September. The patient was placed on his left side, with his hips at the edge of the bed, and his thighs drawn up. The nates being stretched apart, the index finger of the left hand, smeared with lard, was passed into the anus, and upon it a probe-pointed bistoury, flatwise ; the edge was then directed towards the ulcer, and in withdrawing it, was made to divide the integument, and subjacent sphincter, by an incision of an inch in length. The hemorrhage was moderate, and ceased spontaneously. A greased tent was laid in the incision, and a compress upon it was secured in place by a T bandage. The bowels having been freely evacuated, before the operation, very low diet and confinement to his bed were enjoined, for the purpose of preventing, as long as possible, his going to stool.

For a week, the patient remained without going to stool, during which time he was entirely exempt from all painful symptoms. A small quantity of purulent matter was discharged from the anus. Ordered to take Ol Ricini, ℥i, its operation to be aided by an enema of flax-seed tea, and olive oil. Easy evacuations were procured by these means, and they were resorted to during the second week, after which, his stools were spontaneous and natural. At the time of his discharge, October 17th, the wound had healed, there was no further discharge of mucus, and every unpleasant symptom had disappeared.

Report of Cases treated in the Second Surgical Division of the New-York Hospital, from the first of January to the first of July, 1840.

By John Watson, M. D., one of the Surgeons to the Hospital.

The second surgical division of the hospital, embracing all the surgical wards in the marine department, and the accident ward in the main building, has, by an arrangement between the attending surgeons, been assigned for the present year to the alternate care of Dr. Buck and myself. This division of the hospital, includes seven large wards, and as many small ones, and affords ample accommodations for 65 beds.

The patients admitted into the marine department are composed of seamen, riggers, boatmen, and others, engaged on our rivers, or in the coasting trade. Those admitted into the accident ward, are, for the most part, labouring men and mechanics; many of them from the lowest ranks of life. Only one of the patients included in this report, was a female. Our remarks, on the present occasion, will be mostly confined to cases under treatment during the first six months of the present year.

On the first of January, 1840, the cases consigned to my care, amounted to		44
During the six months of my attendance, the new receptions amounted to		231
Making in all,		275
Of these these there were discharged, cured,	173	
" relieved,	22	
" improper objects,	5	
" at their own request,	10	
Died,	13	
		223

And there were consigned to Dr. Buck, at the close of my attendance, exclusive of five cases referred to in this report, and discharged since the 1st of July,	52	
		275

The following is an enumeration of the principal diseases for which these patients were admitted, without reference to their complications, or to diseases supervening after admission :

Venereal diseases and their sequelæ,	97	cases.
Wounds,	36	"
Fractures,	25	"
Ulcers,	26	"
Abscesses, circumscribed 17, diffuse 5,	22	"
Chemical injuries; burns 2, frost 5,	7	"
Injuries and diseases of joints,	10	"
Diseases of genital and urinary organs, (not vener.)	10	"
Diseases of the rectum,	6	"
Diseases of the eye,	6	"
Diseases of the skin,	5	"
Tumours,	4	"
Injuries of the neck,	3	"
Inversion of toe nail,	2	"
Erysipelas, (exclusive of several consecutive cases,)	3	"
Delirium tremens, (exclusive of six " ")	2	"
Tetanus,	2	"
Miscellaneous,	9	"
Total,	275	

We propose in speaking of these cases to allude, first, to such as terminated fatally ; secondly, to such as required surgical operations ; and finally, to a few of the others, somewhat in the order of the foregoing list of diseases. For assistance in recording these cases, we have to acknowledge here our obligations to Mr. A. C. Hull, by whom the registry of cases was commenced and kept, up to the first of May ; and to Dr. J. R. Greacen, by whom it was continued during the rest of the time of our attendance.

1*st. Cases terminating fatally.* Of the 13 fatal cases, rather more than half were either moribund, or beyond the possibility of relief when admitted. The proportion of deaths, to the whole amount of cases, is about one to thirteen and a half.

Of those admitted moribund, two died of injury of the head; one of apoplexy; one of congestion of the lungs, consequent to submersion; one of fracture of the sternum, and compound fracture of the leg; one of fracture of the vertebræ, fracture and depression of the sternum, with laceration of the pericardium; and one of tetanus: seven cases in all.

Of those that died after admission, one died of compound and comminuted fracture of the leg, followed by gangrene and traumatic delirium; one of carcinoma of the penis, with extensive depositions in the lungs; one of suppression of urine, connected with disease of the kidneys: three cases in all.

Of those that had been some time under treatment, two died of syphilitic cachexia with laryngitis, &c.; one of active pericarditis and pleuro-pneumonia, consecutive to caries of one of the ribs: three cases in all.

Some of these fatal cases have already been reported verbally, (see Reports of the New-York Medical and Surgical Society, in this and a former number of the Journal.) A few of the others are also worthy of particular notice.

Case I.—Injury of the head, paralysis of the left side; coma. Death on the ninth day. Laceration of the brain, extravasation in the centre of the right hemisphere. Pneumonia.

Robert Kerr, a native of Scotland, áged 30, was admitted moribund, January 5th, 1840, and died in ten hours after admission. Those who brought him to the hospital stated that while at sea, eight days before admission, he had fallen from a yard-arm, and that he had remained insensible ever since, with total loss of power of the whole of the left side. He was examined five hours after death.

Externally he was marked by a bruise over the left eye, by a second on the right thigh, and a third and more extensive one over the left hip. The abdominal viscera were healthy, with the exception of the liver, which was of its natural colour, but much engorged with blood. Both lungs were congested, and adhering by strong but recent attachments at their upper portion to the parieties of the chest. No fracture was observed in the skull; yet the cerebral substance appeared to have been lacerated, and about half an ounce of congealed blood was found at the seat of laceration in the central portion of the middle lobe on the right side.

Case II.—Injury of the head with laceration of the scalp; coma approaching gradually. Death in six hours. Extravasation from rupture of a small vein on the surface of the brain.

Joseph McMahon, a native of Ireland, aged 28, a carpenter, was admitted late at night on the 8th of June, apparently intoxicated, but able to give a confused account of himself. He had recently been injured, probably by a fall. A very small lacerated wound was observed upon his scalp. This was dressed by the house-surgeon, and the patient thus left for the night. The inmates of the ward stated that he appeared soon afterwards to fall asleep, and to breathe heavily. He was found dead at the early visit on the following morning.

No fracture could be discovered in the skull, although carefully examined. About eight ounces of blood had been extravasated, forming a layer of coagulum under the serous envelopes on the surface of the right hemisphere, and reaching to the base of the brain. The blood had escaped from an evident rupture of one of the small veins, ramifying between the convolutions on the upper and central portion of the right hemisphere.

Case III.—Apoplexy. Death within ten hours of the attack. Disorganization of the cerebral substance at the centre and base of the brain; extensive extravasation filling the ventricles.

John E. Williams of Pennsylvania, a boatman, aged 23, was admitted in a state of insensibility, towards evening, June 26th. A few hours previous to admission, while standing in the street, he had been suddenly seized with an apopletic fit, for which he had been bled without relief. Counter-irritants and revulsives were employed after his admission; and the house-surgeon again bled him in the evening. He continned to sink, however, and died towards midnight. He was examined about 12 hours after death.

The configuration of the body was that of an athletic man, moderately fleshy, and well developed. The left ventricle of the brain was distended with a clot of blood, which on the lower surface appeared gradually to mix with the softened and disorganized cerebral substance, that forms the floor of the ventricle. The right ventricle was also distended with blood, but the walls of this cavity were apparently healthy. The coagulated and grumous blood filled, also, the third and fourth ventricles. The substance of the brain around the tubercula, quadrigemina, upper and posterior portion of the medulla oblongata, and upper anterior portion of the cerebellum, was softened and disorganized, and in places intermixed with grumous blood. The medullary mass, where not thus broken down, was even less vascular than natural, and of a remarkably hard and tough consistence. The membranes of the brain were unusually dry.

Remarks.—It was subsequently ascertained that this young man, though not subject to intoxication, was habituated to high living, and that not long before his death he was known to have had one or two epileptic fits. On the morning of the day upon which he was seized with apoplexy, he appeared to be in perfect health. During the day, which was excessively warm, he had exerted himself in preparing his boat for a pleasure excursion.

Case IV.— Fracture and depression of the sternum; injury of the back; general paralysis. Death in 48 *hours. Extensive laceration of the pericardium; contusion of the heart; laceration of the right lung; fracture of one of the ribs; fracture of the fifth cervical vertebra.*

Ira Boarman of Massachusetts, a seaman, aged 36, was admitted at noon on the 25th of March, having about two hours before admission, while standing near the hatchway of a ship, been struck on the chest by a bundle of hay, and precipitated into the hold, falling about twenty feet, and striking with his back against some bars of iron.

At the time of admission he possessed neither sensation nor power of motion in any part of his body below the diaphragm; the upper extremities were paralyzed, but retained their sensibility in all parts above the elbows; and soon after admission he began to complain of severe pains in his arms. His breathing was somewhat impeded, but his voice was strong and clear; his pulse was apparently natural at first, but afterwards became intermitting and irregular; the temperature of the body was about that of health. He could only lie flat upon his back; the slightest movement of his head or body gave him excruciating pain, and consequently it was difficult to determine the exact seat of injury on his back. The integuments over the sternum were not broken; there was some infiltration beneath them, and the bone itself was depressed.

He continued in this condition, breathing with tolerable freedom, and when left quiet, complaining of but little pain during the rest of the day. On the following day, his bowels became tympanitic, he was unable to void his urine or fœces; his respiration more embarrassed, and his pulse intermitting. His urine was drawn off by the catheter, and his bowels moved by a stimulating enema. He sunk very gradually, and died about 48 hours after the accident.

The cellular tissue over the sternum was injected with blood; a comminuted fracture of the sternum, with depression, was detected between the second and third ribs. The anterior portion of the pericardium was lacerated longitudinally throughout almost its whole extent. A contusion, apparently with a superficial abrasion, about as large as half a dollar, was observed in the anterior wall of the right ventricle of the heart itself. Considerable ecchymosis existed under the serous surface of the pericardium, but no blood was found in its cavity. The lower lobes of both lungs were much engorged with blood. There was a laceration about an inch and a half long in the posterior part of the upper lobe of the right lung, caused by fracture and depression of the third rib at that point. The cavities of the pleura were free from blood. A fracture was found extending through the body of the fifth cervical vertebra.

Remarks. — The extensive injury of the pericardium, and contusion of the walls of the heart in this case, were not anticipated before the examination: the state of the circulation, and the patient's general symptoms, gave but very equivocal evidence of these injuries.

In the following case of fracture of the sternum, without very evident injury of the heart, the patient died almost immediately after the accident.

Case V.—Fracture and depression of the sternum; compound fracture of the leg. Death in about one hour. Extravasation into the cavity of the pleura; laceration of the liver.

Thomas Matthews, an Irish seaman, aged 25, was admitted on the 23d of May, having recently been precipitated from the topmast of a schooner, striking as he descended against the bulwarks of the vessel, and falling into the river. When admitted he was wet and cold, and no pulse could be detected at the wrist. He was sensible, however, and requested to be turned on his side, as it gave him great pain to lie on his back. No reaction followed, and he died in about an hour after the accident.

He had suffered a compound fracture of the right leg; the sternum was fractured at its upper third, and the lower portion had been driven inward so as to lacerate the pleura. The cavity of the pleura contained a great quantity of blood. The left lobe of the liver was lacerated.

Case VI.—Tumour on the chest, connected with the caries of one of the ribs. Erysipelas, pleuro-pneumonia, and pericarditis supervening in the progress of the case, and leading to its fatal termination.

John McClaron, an Irishman, aged 42, seaman, of good constitution and temperate habits, was admitted on the 14th of February, on account of a swelling that had existed several months on the left side of his chest, and that had of late given him much pain, and prevented him from attending to his occupation.

A flattened tumour scarcely elevated enough to be at first glance perceptible, existed on the left lower and posterior portion of the chest near the angle of the ribs. By careful pressure over the centre of this, a small elastic and circumscribed swelling, about an inch in diameter, flattened, and apparently attached to the sixth rib, was detected; and one or two smaller swellings of similar character were afterwards discovered in the neighbourhood of this, all apparently connected with the rib. The bulging of the integuments caused by these small but deep tumours, gave to the surface the appearance of a flattened tumour, nearly circular, and about three inches in diameter. Pressure over this gave the patient no uneasiness, No evidences existed of any disease within the thorax. He could assign no specific cause for the swelling, but thought he might have formerly injured his side by a fall.

About the 1st of March, a puncture was made with a lancet through the swelling into the largest of the elastic tumours which appeared to be attached to the rib. Slight hemorrhage, and trifling discharge of concrete matter, followed the puncture. The tissues above the rib were found to be thickened and consolidated. In a few days the wound began to suppurate, and the patient being now free from pain, left the hospital. The discharge, however, becoming gradually more abundant, he returned in ten or twelve days. The opening was now dilated, no diseased bone could be detected; the sore was treated as a fistulous ulcer.

On the 22d of April, several small fragments of bone were found loose in the bottom of the fistula. The integuments were again divided so that the finger could be introduced, and the whole of the detached pieces, some of them nearly as large as peas, were carefully removed. The patient's general health was still very good, and in the course of a few days the wound had almost entirely closed.

May the 7th, having on the previous night been fatigued by setting up with a very sick patient, and having changed his room for a smaller one, in which he was exposed to the draught of a window, he was seized towards midnight with a severe chill; and on the following morning he was found with considerable pain. In the course of the day he was bled freely, took some cathartic medicine, and was put on the use of spiritus Mindereri. As he complained of pain in his side, the chest was examined, but gave no evidence of any marked disorder.

May 9th. Febrile excitement somewhat diminished; pain in the left side still continuing. Cups were applied to the chest, and the patient put on nauseating doses of Tart. Ant. dissolved in spts. Minderer. to be repeated every two hours.

May 10th. Up to this date the symptoms were apparently indicative of pleuritis; but this morning the integuments over the left side of the chest were in a state of acute erysipelatous inflammation. He still complained of pain in the side, and now over the scrobiculus cordis, and of pains in other parts of his body. The spts. Mindereri and antimony were continued, and the inflamed surface was anointed with mercurial ointment.

May 11th. The general excitement still continuing, and his bowels being somewhat constipated, he was put on the following mixture. ℞ Sulph. Magnes. ℥i. Tart. Ant. grs. viii. Aq. pluvial. ℥vij. Of this he bore without producing nausea, ℥ss. every two hours.

May 12th. This morning his general expression was haggard, his skin was bathed in perspiration, his pulse frequent and small; he had passed a restless night, and the pain in the chest was still severe. But much of this was attributed to the erysipelatous inflammation. His bowels still remaining constipated, he was directed Pulv. Purgans. ʒiss. Again cupped on the anterior part of the chest, and the antimonial solution continued. In the afternoon, the cathartic medicine not having as yet operated, a stimulating enema was administered, which produced a small evacuation of fœcal matter.

May 13th. Pulse full and less frequent, skin moist, pain abated, erysipelas subsiding. The cathartic medicine has produced no further action of the bowels. Suspend the antimonal solution, and have Sub. Mur. Hydrarg. grs. xx.

May 14th. Symptoms as yesterday. Bowels moved by an enema. In the evening he had an anodyne of Solut. Sulph. Morph. gtt. xx.

May 15th. Symptoms as before. Resume the spts. Mindereri without the antimony. The little food that he had hitherto taken since the febrile attack, had been of the simplest kind. This afternoon his pulse was for the first time observed to intermit. Towards night he evidently grew worse; his voice became weak and feeble; his respiration hurried; his skin purplish, cool, and bathed in clammy perspiration. It was necessary to suspend the diaphoretic, and administer small portions of brandy toddy, made weak, which he continued to take through the night.

May 16th. Reaction again established; skin warm and dry; pulse full but intermitting. In the afternoon he was again threatened with approaching collapse. His bowels were moved by a stimulating enema, and during the night it was found necessary to resort again to the brandy.

May 17th. The patient evidently sinking; the erysipelas had entirely disappeared; but the whole of the integuments on the posterior part of the body were injected as if by the gravitation of venous blood, presenting an appearance precisely similar to that produced by stasis of blood in bodies that have been for some days dead. The inflammation on the surface had for several days prevented any attempt at exploration of the chest. But this morning the crepitating sound was detected in the lower lobe of the left lung. He died about five o'clock, P. M.

Post-mortem examination nineteen hours after death. The pericardium was distended with serum, and its inner surface coated on all parts with a layer of plastic lymph about a quarter of an inch thick, extended as well over the heart as over the free portion of the serous surface. The substance of the heart was in other respects healthy. The left lung was firmly united to the point of the chest opposite the diseased portion of the rib. The remaining portion of the pleura was free from adhesions, but it was coated like the pericardium with a recent deposit of plastic lymph that adhered to it very slightly. The cavity of the pleura contained about a pint of serum. The lower lobe of the left lung was in a state of red hepatization; the upper lobe was free from disease. The other viscera were to all appearance healthy.

The diseased rib near its angle was somewhat thickened, and rather broader than natural; and contained a deep notch on its upper edge large enough to admit the end of the finger, and extending rather more than half way towards the lower edge of the bone. The lower edge was rough and irregular, and was also marked by a smaller notch. The rib on the sternal side of these was also perforated by a hole on its outer surface. These irregularities gave the bone the appearance of having once been fractured and afterwards united by callus. The dead fragments that had been removed through the opening in the integuments, had probably been exfoliated from the spots now marked by the deep notches. These notches were prevented from communicating with the cavity of the pleura, both by the periosteum, which was thickened and of a cartilaginous hardness, and by the firm adhesion between the lung and the side of the chest. This adhesion was evidently of ancient date.

Remarks.—This patient had not had the least cough during the whole of his disease, and his respiration was free from embarrassment until within a few days of his death. The disturbance in the circulation, the irregularity of the pulse, and the sudden sinking, with the severe pain over the region of the heart, gave at this late period the first suspicions of the inflammation of the pericardium which was detected after death. Had the extensive disease within the chest been evident at first, it would have been met by more active depletion; but it had been almost completely masked by the accompanying erysipelas. And it is worthy of remark that this superficial inflammation was as near as possible cöextensive with the inflammation on the inner surface of the chest.

II. CASES REQUIRING SURGICAL OPERATIONS.

The following is a list of a few operations performed upon the patients included in this report:

An operation for varicocele; one for osteo-sarcoma of the lower jaw; one for a deep congobate tumour on the side of the neck; one for inversion of the toe-nail; one for prolapsus ani; one for stricture and retention of urine, requiring an opening into the urethra from the perinæum; one for staphyloma, requiring the removal of the whole of the opaque, pendent, and protruding cornea; one for an enlarged bursa over the patella; one for fistula in ani; and five or six for serous infiltration into the tunica vaginalis, all of them depending on disease of the testicle. We will refer only to the most important of these.

Case VII. — Varicocele, relieved by removing a portion of the integuments of the scrotum.

John Pierce, a seaman, of Massachusetts, aged 21, was admitted on the 23d of June, with enlargement of the veins of the left spermatic cord, that had existed about two years, and that had been produced, according to the patient's account, by a severe strain in lifting. He could assign no other cause than this, although the enlargement did not attract his attention until some weeks after the accident. He has never been troubled with constipation of the bowels.

The enlarged and tortuous vessels of the cord had produced a globular tumour about as large as a pullet's egg immediately above the testis, of a doughy feel, and when pressed, giving the sensation usually compared to a bundle of round worms. The diseased vessels could be seen elevating the integuments into irregular and tortuous edges. This disease was attended with considerable uneasiness, a sensation of dragging and pain in the part, with pains in the loins, which were so severe as to disable him for active exercise, and sometimes obliging him to remain on his back. He had been in the habit of wearing a suspensory bandage, which had afforded him very trifling relief.

On the day after admission, as much of the integuments of the scrotum as could be drawn together by the fingers over the enlarged vessels, was firmly seized and held together between the branches of a long pair of forceps, and the part above the forceps was then removed by one stroke of the bistoury. The flap appeared to form about one-third of the whole integuments of the scrotum; and the retraction of the remaining portion was so great immediately after the operation, as to leave the whole of the tunica vaginalis on the left side exposed, and to allow the edges afterwards to be drawn together by sutures only with the greatest difficulty.

For several days after the operation, the patient continued comfortable; and though no portion of the wound united by adhesion, yet it contracted very rapidly, and presented a healthy granulating surface. But on the 1st of July, he was seized with a severe chill, with nausea and vomiting, which was followed by febrile excitement, and finally by a severe attack of erysipelas, which involve the integuments of the scrotum, penis, and parts adjacent, and extended to the sub-cutaneous cellular tissue in which it proceeded to suppuration. One or two openings formed along the base and body of the penis, continued to discharge freely for several days. During the course of this attack the patient was treated by antiphlogistic regimen, by cathartics and diaphoretics internally; and by anodyne and emollient applications, followed finally by simple dressings to the part. As the erysipelatous inflammation subsided, the original wound, as well as the ulcerated openings, gradually contracted; and by the 20th of July, they had entirely healed.

The patient left the hospital on the 4th of August. The cicatrix produced by the healing of the wound was sufficient to support the distended veins, and prevent them from protruding much below the external abdominal ring; but they had not become permanently contracted or consolidated. After the patient had been for some time in bed, the swelling would appear to be effaced; but after he had been walking about the house all day, the enlargement of the veins was still apparent. He was, however, permanently relieved of the dragging sensation and pains of which he complained before the operation.

Remarks. — This, so far as I am aware, is the first time in which Sir Astley Cooper's principle of operating for the cure of varicocele, has been adopted in this country. And though the relief afforded by the operation was probably not quite so great as in the cases published in Great Britain, yet it is quite sufficient to recommend a repetition of this operation, in preference to any other hitherto proposed, in severe cases of this disease.

Case VIII. — Osteo-sarcoma of the lower jaw; cured by excision.

Margaret Tracy, of Brooklyn, aged 15, was admitted on the 20th of July, with a tumour on her lower jaw, which had existed about three months, and occurred without any known cause.

When first observed, the tumour was very small, and seated on the base of the bone just in front of the attachment of the masseter muscle. Its growth has since been very gradual, and without the slightest pain. At the time of her admission it extended from within half an inch of the angle of the jaw on the left side, nearly as far forward as the foramen menti; and produced a bulging of the bone outward, inward, and downward; and appeared nearly as large as a hen's egg. The greatest degree of bulging was in the direction downward, and hence the deformity on the cheek was by no means great. Her voice and deglutition were unaffected. She was of a scrofulous habit; her mother had died of phthisis, and one of her brothers was affected with strumous enlargement of the glands of the neck. She had never suffered from toothache; all her teeth were firmly fixed in their sockets. The disease appeared to have originated in the substance of the bone below the level of the alveola, and not yet to have extended to the alveolar process.

The tumour was removed on the 29th of July. The following were the steps of the operation.

An incision was carried through the integuments from near the chin along the base of the jaw and over the tumour, as far backward as the angle. The anterior extremity of this cut was prolonged about an inch downward on the neck, by a second incision; and the posterior extremity continued, by a third incision, downward and backward, somewhat more than an inch, so as to reach the anterior edge of the sterno mastoid muscle. The first incision divided the facial artery and one of its branches; both of these vessels were secured. The soft parts on the anterior face of the tumour were next dissected off, and the incision carried through the salivary membrane on the outer side of the gums. The lower part of the tumour was then laid bare, and the dissection carried through into the mouth on the inner side of the bone. After thus exposing all parts of the diseased mass, Hey's saw was applied to the bone on the anterior side of the tumour, and passed in an oblique direction across the bone, about three quarters through it: the division of the remaining fourth was completed by means of the cutting pliers. The saw was again applied to the bone behind the tumour, and the latter part of the cut completed with the pliers as before. The tumour being now detached, was removed without farther dissection. The small artery of the bone towards the chin was now found bleeding rather smartly, being nourished by its anastomosis with the vessels on the right side. The hemorrhage was at once arrested by pressing a small piece of beeswax against the divided surface. The wound of the integuments was finally drawn together with interrupted sutures, and dressed with dry lint, a compress, and bandage. Very little twisting of the features was noticed after the operation, and the patients' voice and power of deglutition were not in the least affected.

The tumour was found to have originated in the cancellated structure of the bone. The morbid deposit that had distended the bone was of a cartilaginous hardness, of an opaque white colour, and disposed in nodules, each contained in a separate cell, some of these masses being nearly three-quarters of an inch in diameter, but generally much smaller; they could easily be removed from the bony case in which they were deposited. Over the largest and most superficial of them, the bone had been so much distended and attenuated as not to be thicker than an egg-shell. Every particle of the diseased mass had been removed. The excised portion of the jaw was about twice as long at its base as upon its alveolar edge. The three last teeth only were removed, the first molar was still remaining in the mouth, and after the sutures had been drawn together the loss of bone was scarcely perceptible, except by close examination.

For about a week after the operation the jaw was kept at rest, and the patient nourished on spoon diet. Not an untoward symptom occurred: the first dressings were removed on the 5th of August. On the 17th of August the patient left the hospital, the wound at this date being almost entirely cicatrized, and the patient able to use the jaw in eating bread. The divided surfaces of the bone could no longer be felt bare; they appeared to have approximated considerably towards each other, and a hard elevated ridge running from one fragment of bone to the other, could be felt with the finger in the mouth. The chin was now slightly drawn to one side.

Case IX.—Deep glandular tumour on the side of the neck.—Extirpated.

Henry Owen a Welsh lad, aged 19, of fair florid complexion, and scrofulous diathesis, enjoying tolerably good general health, was admitted into the hospital on the 8th of May, on account of a tumour on the side of the neck, which had existed about four months.

It appeared to be composed of at least three distinct masses; the largest lay just below the angle of the jaw, reaching thence to the sterno mastoid muscle.

It was more superficial than the others, quite movable, solid, and of an irregular ovoid shape, and as large as a duck's egg; the integuments over it were perfectly healthy. The second mass was not quite so large as this, and lay below and behind the mastoid process, in the angle between the upper portions of the sterno mastoid and trapezius, and appeared to extend under the former muscle. The third mass lay completely under the sterno mastoid, on a level with the anterior part of the cricoid cartilage, and appeared to have some connection with the second mass; it was flattened from the pressure of the muscle that lay over it, to which it gave some degree of bulging. The anterior edge of this part of the tumour appeared to press upon the deep vessels of the neck, and to reach towards the trachea. There were also several smaller masses connected more or less intimately with one or the other of these larger growths.

These swellings had given the patient no pain, they were of late rapidly on the increase, and were beginning to interfere with respiration; they had been treated with iodine both internally and externally, for about a month, without benefit.

It consultation it was deemed advisable to attempt the complete extirpation of the diseased mass, one surgeon only objecting to this, on the ground of impracticability. The operation was performed on the 12th of May.

It is needless to recount the steps of the operation, except so far as to say that it involved the complete division of the sterno mastoid muscle, and of the superficial jugular vein; and that the morbid mass was completely extirpated. Much advantage was obtained in following the directions laid down by Dr. A. H. Stevens, in a late number of the New-York Medical and Surgical Journal; the rule being to cut down freely until the proper capsule is fairly divided; and after exposing the tumour, to finish the dissection with the fingers, or the handle of the scapel. By following these directions, this formidable tumour was completely removed, with scarcely any loss of blood. Only two small vessels required the ligature. The different masses of the tumour were found to consist of a hard whitish texture, apparently formed by hypertrophy, and consolidation of the lymphatic glands.

The patient had little or no constitutional disturbance in consequence of the operation, and in the course of a few weeks the wound had closed, partly by adhesion and partly by granulation, to about one third of its original extent. Subsequent to this, however, it became flabby, with pale languid granulations, and finally assumed the character of a small scrofulous ulcer, with undermined edges and giving issue to a copious discharge of purulent matter intermixed with crude tuberculous masses. The patient left the hospital about the middle of July; his general health had become somewhat reduced by the discharge, by want of exercise and confinement to the wards of the house. When last seen, (September 4th,) the ulcer was still open, but disposed to cicatrize; the discharge had been greatly reduced, and the patient's general health was improving.

Case X. — Inversion of the toe-nail. — Extirpation.

In this case the disease was of long standing, and had resisted every form of treatment, short of extirpation of the nail itself. The soft parts on both sides of the nail of the great toe on the right foot were ulcerated and in a fungous condition, and so sore as to prevent the patient from using his foot. Palliative means were employed until the irritability was in some degree subdued, and on the 21st of January the whole nail was removed by a modification of Lisfranc's operation.

The edge of a straight bistoury was carried perpendicularly through the integuments behind the matrix of the nail down to the bone, then directed forwards and carried horizontally under the nail toward the extremity of the toe; thus removing the nail and its matrix at a single sweep. The wound healed by granulations, and the patient was discharged on the 10th of February.

Case XI.—Enlargement of the bursa in front of the patella.—Cured by rupturing it.

Thomas Cranmer of New-Jersey, a seaman, aged 26, was admitted April 11th, with an enlargement of the bursa in front of the patella, caused by an injury about ten days previous. The tumour was of a globular form, and nearly half as large as the patient's fist.

It was seized firmly between the fingers and pressed with great force, until it burst and discharged its contents into the cellular tissue beneath the skin. A roller was then applied, and the limb kept at rest for a few days. The patient was discharged cured on the 16th of April.

Remarks.—Tumours of this sort are occasionally difficult to manage, and patients will not generally submit to have them broken by a direct blow. I treated a case precisely similar to the present, about a year previous, by tapping and injecting it with a solution of sulphate of zinc, as in the operation for hydrocele. In a few days after this operation the tumour was again distended with serum, as large as before; and continued so until I finally treated it, as above described, by pressure until it burst; and with instant and permanent success. The enlarged bursæ occurring about the wrist, and occasionally under the chin, are more readily managed in this way than by any other means.

The other cases that called for operations, all terminated successfully: they present no points of special interest.

III. INDIVIDUAL DISEASES AND ACCIDENTS.

1*st. Venereal diseases and their sequelæ.*—Of the patients referred to in this report, a very large proportion, constituting rather more than one third of the whole, were affected with venereal diseases.

These cases may be grouped into first, those in which the primary symptoms were still existing when the patients entered; and secondly, those in which the primary symptoms had disappeared before admission. The following tables present a sufficiently minute and correct analysis of these two groups, which in all amounted to 97 cases, exclusive of a few cases of rheumatism and a number of chronic ulcers presumed to be of syphilitic origin.

TABLE FIRST.

Cases of venereal disease in which the primary symptoms existed when the patients were admitted.

Form of Disease.	Complications and Sequelæ.	Cured.	Left by Request.	Died.	Remaining.	Total.
Chancres.	without complications or sequelæ,	7	....	....	2	9
"	Sloughing and phagedenic sores,	3	....	....	....	3
"	Phymosis,	3	....	....	....	3
"	" congenital,	1	....	....	....	1
"	Paraphymosis,	1	....	....	....	1
"	Ulceration of the scrotum,	1	....	....	....	1
"	Fistula through corona glandis,	1	....	....	....	1
"	Gonorrhœa,	2	....	....	2	4
"	Bubo,	11	1	....	2	14
"	Periostitis from a previous disorder,	1	....	....	....	1
"	Phymosis, papulæ, rheumatism,	1	....	....	....	1
"	" " ulcerated throat,	1	....	....	....	1
"	Rupia simplex,	1	....	....	....	1
"	Bubo, ulcerated throat, rupia, laryngitis, cachexia	....	....	1	....	1
		34	1	1	6	42
Buboes.	exclusive of 14 stated above,	....	....	....	....	......
"	Subsequent to chancres,	2	....	....	3	5
"	Subsequent to gonorrhœa,	1	....	....	....	1
		3	......	......	3	6
Gonorrhœa,	exclusive of four stated above,	....	....	....	....	......
"	Simple,	13	1	....	1	15
"	Orchitis,	2	....	....	....	2
"	Ulceration of the fauces,	1	....	....	....	1
		16	1	......	1	18

TABLE SECOND.

Cases of venereal disease in which the primary symptoms had disappeared before admission.

Form of Disease.	Complications, &c.	Cured.	Relieved.	Died.	Remaining.	Total.
Orchitis.	simple after gonorrhœa,............	4	1	......	......	5
"	Hydro-sarcocele, syphilitic,........	2				2
"	Hydro-sarcocele, scrotal fistulæ, iritis and periostitis.....	....	1	......	......	1
		6	2	......	.....	8
Inflam. of Fauces.	Ulceration of tonsils.	1	......	......	1	2
Cutaneous Affections.	Condylomata and warty excresences,......................	4	......	......	......	4
"	Squamous eruptions,....	1	1	......	......	2
"	Rupia,..........................	1	......	......	1	2
"	Papular eruptions,................	1	......	......	......	1
"	Papular eruptions and periostitis...	2	......	......	......	2
		9	1	......	1	11
Periostitis.	exclusive of cases above stated.	4	......	......	......	4
Laryngitis.	Periostitis, sloughing pharynx, cachexia.	....	... ...	1	......	1
Stricture of urethra.	Subsequent to gonorrhœa.	3	2	......	......	5

The treatment of the primary symptoms, in the foregoing list of cases, has in general been conducted without resorting to the internal use of mercury; and I have reason to believe, that when seen within a few days of their first appearance, and in some cases, even long afterwards, but before the constitution has become involved, the primary sores have yielded as readily to local treatment, as they do to the internal use of mercury. My usual course has been, to cauterize the chancres freely and repeatedly with nitrate of silver at the onset; and as soon as they present a healthy granulating surface, to treat them as simple sores. The patient is required to employ frequent ablution with soap and water, to keep the sores dressed with lint moistened in black wash, to pay due attention to the state of the digestive organs, to make daily use of the compound decoction of sarsaparilla as a diet drink, and have his bowels frequently acted upon by sulphate of magnesia.

After the primary sores have healed, especially if there be any remaining induration, or any threatening of constitutional symptoms, and the patient is in a condition to bear it, I have resorted to a mild mercurial course, assisted with sarsaparilla and the other usual adjuvants. I have found the secondary symptoms neither more severe, more difficult to manage, more rapid in their appearance, nor indeed much more likely to appear at all, where the primary symptoms have been thus managed, than where mercury has been freely administered at first. On the contrary; the severest forms of secondary disease were most frequent amongst those who had been treated liberally with mercury for the primary symptoms.

In the more chronic forms of the disease, and those in which mercury had already been administered to excess, I have made liberal use of the hydriodate of potass, and the patients have improved under the treatment; as they usually do when mercury is suspended, and they are managed simply by wholesome diet, tonics, diaphoretics, and other apparently less efficient remedies. I am therefore not as yet prepared to say how far the hydriodate of potass of itself, may be looked to as a remedy for syphilis. In some few cases it produced aphthous sores on the tongue and excoriation of the salivary membrane; but independent of this effect, which is owing to its direct irritation, I have not observed it producing anything like ptyalism.

2*d*. *Wounds*. Of the 36 cases of wounds of the soft parts, seven were incisions, two punctures, 17 lacerations, and 10 contusions. The only case of any peculiarity from the nature of the injury, is the following:

Case XII.—Injury from the bite of a rat.

Thomas Mattock of Maine, seaman, aged 55, admitted Feb. 8th, with inflammation of the right side of the face and neck. Two weeks before admission he had been bitten by a rat on the inner edge of the right eyebrow. For a few days after the accident the wound had not given him much uneasiness; but diffuse inflammation gradually ensued, aggravated probably by the irritating applications to which he resorted for relief; he had kept the wound covered with a slice of salt pork. When admitted, the whole of the right side of the face and neck was swollen, red, indurated, and painful. The right eye was permanently closed by the tumefaction of the lids. No purulent collection could be observed. He complained of difficulty in swallowing, which was probably owing to inflammation extending along the absorbents in the deeper parts of the neck. He had had no constitutional disturbance.

After his admission the inflamed parts were freely scarified, allowed to bleed, and afterwards dressed with emollient poultices, which were soon changed for an opiate lotion. A second scarification was required in a few days afterwards. The patient was kept on an abstemious regimen, and treated with saline cathartics. The inflammation subsided very gradually, and on the 19th of February he was discharged cured.

3*d*. *Fractures.* Of the 25 cases of fracture, 15 were simple, seven compound, and three were attended with peculiar complications.

Of the *simple fractures*, one was of the third metatarsal bone, two of the fibula, one of the leg, one of the patella, three of the femur, four of the humerus, two of the clavicle, and one of a rib.

Among the simple fractures of the humerus, one was of the neck of this bone, the others in the shaft. In one of these last, the case has been reckoned twice. After the bone had been united, and the patient had been several days out of the hospital, he returned with the bone broken a second time. This patient had also formerly suffered a fracture of the femur. Among the simple fractures of the femur one case might also have been counted a second time; the bone had apparently united, but the patient in attempting to get out of bed, some eight weeks after the first injury, fractured it a second time. Three of these simple fractures were left under treatment, the rest were all cured prior to the first of July.

Of the *compound fractures*, four were of the leg, one of the forearm, one of the lower jaw, and one of the cranium.

Of the compound fractures of the leg, one was cured, two were convalescing, but still under treatment on the first of July, and one died. This fatal case might properly be classed among the complications; the bones were broken into several small fragments, and the soft parts of the whole limb were much injured; gangrene and traumatic delirium set in, and the patient died on the fourth day.

The three other compound fractures were all discharged cured. The case of fracture of the skull was one in which the accident had been produced by the stroke of an axe upon the right side of the head, some months before admission. There was still an evident fissure in the bone, through which a probe could be passed down to the dura mater. The patient complained of little else than constant headache. The external wound finally contracted to a very small fistulous opening; and this still persisted at the date of his discharge.

Of the *complicated fractures*, one was a fracture of the sternum, spine, and ribs; and one a fracture of the sternum with compound fracture of the leg; both of which terminated fatally; and have already been referred to under the head of fatal cases. The other case did well; and from the severity of the accident, it is worthy of special notice.

Case XIII.—Compound and comminuted fracture of the femur: simple fracture of the humerus: fracture of both condyles of the lower jaw.

John Davlin, an English seaman aged 19, was admitted on the 27th of March, having while at sea three weeks previous, fallen from the yardarm, and broken his right thigh into several pieces, fractured his left arm, broken off both condyles of the lower jaw, and suffered sundry contusions of the soft parts. The mate of the vessel who brought him to the hospital, stated that a fragment, including the whole thickness of the thigh bone and about two inches long, had been broken off by the fall, and was afterwards found sticking fast in the deck. He had had hemorrhage from one ear, and had heard the air whizzing through the other ear; he had also received a deep gash on the chin. Immediately after the accident the thigh had been secured in the straight position, and his arm bound up in a rude manner, but with the bone in its proper position.

When the patient was admitted, he presented no signs of having suffered from constitutional disturbance; the wound caused by the protrusion of the femur was about as large as half a dollar, situated in the outer part of the thigh, six or eight inches above the knee; and was suppurating very slightly. The femur was found broken into several pieces; one fragment three or four inches long, and quite loose, was pointing at the upper edge of the wound, but was not so detached as to be easily removed; another fragment much smaller, and not involving the whole thickness of the shaft, was found loose in the bottom of the wound, and was at once removed. The limb was placed in the straight position, and the wound dressed with dry lint, which was changed but seldom, as the wound suppurated very little after his admission, and soon closed completely. The broken humerus had already begun to unite, and required no special attention.

His face was somewhat deformed by the retraction of the chin: the mouth could not be opened so as to protrude the tongue to any great extent beyond the teeth, and the teeth of the upper and lower jaw could not be brought into contact. In attempting to move the jaw the patient experienced pain and crepitation just in front of the ears; the crepitation could easily be felt by placing the fingers over the fractured condyles. He could still feel the air rushing through the left ear. Nothing was done for the fractures of the jaw. In a few weeks the rubbing of the broken surfaces and attendant soreness ceased to trouble him; but the shape of the jaw, and difficulty of opening the mouth to any great extent, still remained unaltered.

He was able to walk about on crutches in the early part of June, the injured thigh being about four inches shorter than the other; but he did not leave the hospital until the 10th of July.

4th. Diseases of the Joints. Of the ten cases under this head, two were luxations, one of the humerus, one of the scapula from its articulation with the clavicle; five were injuries more or less severe; and three were spontaneous diseases. The following is the only one of these worthy of notice.

Case XIV.—Fracture of the patella badly united by ligamentous union; followed by diffuse inflammation and suppuration in the neighbourhood of the knee-joint.

John Harrison, seaman, of Massachusetts, aged 28, admitted on the 8th of December, 1839, with an acute attack of inflammation which soon resulted in a diffuse abscess in front and on each side of the right knee-joint.

About eighteen months previous he had a transverse fracture of the patella, for which he was confined, with the limb in a straight position, about ten weeks. At the end of this time the fragments were in apposition: but as he began to use the limb, the ligamentous union gradually yielded until the two fragments of bone became separated to the distance of three inches and a half from each other. In this condition he remained, able to walk about with a stick until the present attack. The inflammation and suppuration, though profuse, did not involve the cavity of the joint.

The case was treated as an ordinary abscess, and the patient cured February 10th, 1840.

5th. Abscesses. Among the cases of diffuse abscess, two were seated on the thigh, and were attended with much constitutional disturbance. In both of these the purulent collection had been preceded by inflammation of an erysipelatous character from injury of the leg below the knee. The matter was deposited external to the fascia lata, and extended from just above the knee up almost to the groin. Three cases occurred beneath the fascia of the forearm, and were caused by injuries about the fingers and palm of the hand. These cases of sub-apeneurotic inflammation of the forearm are usually described as phlegmonous erysipelas; they are often attended with serious consequences, and give rise to excessive constitutional disturbance; and sometimes the cellular inflammation and suppuration extend as high up as the shoulder.

The treatment was in no respects peculiar, except that the abscesses of the thigh were injected with a solution of sulphate of zinc. They all recovered.

6*th. Injuries of the neck.* Without referring to the cases of general paralysis produced by fracture or injury of the cervical vertebræ, or to injuries of the throat in three or four cases of attempted suicide, there were three other cases worthy of a passing notice.

In one of these, an injury behind the neck had produced a degree of tension and permanent inclination of the head towards the right shoulder. This deformity came on gradually a few days after the injury, and persisted about two months. The patient was finally relieved by local depletion, counter-irritation, and passive motion.

In another case, a similar injury led to paralysis of the muscles on the back of the neck. The patient was unable to support his head erect, the chin falling towards the breast.

In the third case, tension of the neck, owing probably to inflammation extending along the sheath of the right sterno-mastoid muscle, followed an acute attack of tonsilitis. The deformity continued about two weeks after the inflammation had left the throat and then gradually subsided.

7*th. Diseases of the Urinary Organs.* Of this group two cases presented some peculiarities. In one, the patient was for several weeks unable to evacuate the contents of his bladder, and was suffering from constant stilicidium urinæ. The disorder was originally induced by a severe blow in the hypogastric region. Under the use of local depletion, the daily introduction of the catheter, counter-irritants, and antiphlogistic regimen, it was gradually overcome.

In the second case, the patient was suffering from an acute attack of irritability of the neck of the bladder, with incontinence of urine, depending on the retrocession of a pruriginous eruption to which he had long been subject. He was treated with the infusion of diosma crenata, and mild laxatives internally, aided by the frequent use of alkaline baths — and was cured in about three weeks.

8*th. Erysipelas.* Many of the severer cases of erysipelas occurred in patients under treatment for other diseases. To some of these complicated cases we have already alluded. In the following instance the symptoms were remarkable, and for some time threatened a fatal issue.

Case XV.—Erysipelas of the head and face; retrocession of the erysipelas, followed by congestion of the brain, as indicated by convulsions and maniacal symptoms, which were cured by re-inducing the inflammation of the skin.

Frank Johnson, a Danish seaman aged 30, was admitted on the 11th of Feb. with desquamation of the integuments of the face, and slight tumefaction and redness about his temples, ears, and back of the neck,—the remains of an acute attack of erysipelas of the head and face. Those who brought him to the hospital stated that within a day or two he had been somewhat deranged. Although reputed temperate, he appeared as if threatened with delirium tremens. He was indisposed to sleep, but had no tremor of the muscles; his pulse varying from 70 to 100; his skin cool; bowels constipated; tongue coated in the centre, and pointed and red at the edges; pupils contracted and sluggish; intellectual faculties oppressed. He made no complaint of pain, and when questioned he gave rational answers, but not always the correct ones. There was no marked delirium. In this condition he remained for the first two days, during which time warm anodyne fomentations were applied to the inflamed surfaces, and the patient was purged freely with calomel.

Feb. 13th. His intellectual faculties appearing more oppressed, eighteen leeches were applied to the temples and behind the ears. These drew freely, and immediately afterwards he appeared to be somewhat relieved; his skin became warmer, intellect clearer, and his pulse rose from 80 to 100. But during the evening he became delirious, and was wandering about his room the most of the night; he had some sleep, however, under the influence of an anodyne.

Feb. 15. Delirium more confirmed, pupils more contracted, eyes glistening, pulse 72, tongue contracted and red at the edges. The patient during the past night had had little or no sleep, and was complaining of severe pain in the head. Leeches were again applied, the patient put on small and repeated doses of calomel, and his diet restricted to simple arrow root. Up to this date the erysipelas continued to linger about his ears.

Feb. 16. During the past night he attempted to jump from his bed-room window, and cut his scalp against a broken pane of glass. The wound had bled very freely. No febrile excitement, pulse 70; the patient so delirious as to require a constant watch over him. In the afternoon he was cupped on the back of the neck; calomel continued.

Feb. 17. Patient in a state of great prostration; in attempting to raise him he became faint; he had some repose during the night: pulse 80, tongue moist and clean, bowels free, skin cool, lower extremities very cold, respiration irregular, delirium unabated. A small blister was placed behind each ear, sinapisms were applied to the feet, the calomel continued; and a diet of gruel, containing a small quantity of wine, was allowed.

Feb. 18. During the night he had had several convulsions. In the morning his general symptoms were as at last report, but prostration not so great. The blisters had not drawn. The scalp was now shaved and covered with a large blister, and the compound infusion of senna was ordered in small and repeated doses, until free catharsis was effected. The calomel was discontinued; it had, as yet, produced no symptoms of ptyalism.

Feb. 19. Convulsions recurred again last night, and are still occurring at intervals. The pulse, after one of these attacks, rose to 108, but was very small; delirium unabated, feet and legs cold, general surface of natural temperature, tongue dry and brown; the cathartic had operated mildly. The blister had not yet inflamed the skin sufficiently; the whole of the scalp was therefore rubbed over with the strongest aqua ammoniæ, and the patient took internally a few grains of carbonate of ammonia.

Feb. 20. The aqua ammoniæ has been effectual in exciting inflammation of the integuments of the head and face; great tumefaction and redness of the scalp, face, ears, and adjacent parts. The patient slept during the greater part of the night, and is still disposed to sleep; surface of the body warm, pulse 100, tongue dry. Continue the carbonate of ammoniæ, grs. v, every three hours, with a diet of gruel, flavoured with wine.

Feb. 21. Slight delirium, pulse 100, lower extremities warm, tongue still dry, erysipelas of head and face still continues. The patient had slept during the night. Discontinue the carbonate of ammonia, and have aq. ammon. acetat. ℥ss. every two hours.

Subsequent to this date the patient began gradually to recover. The erysipelas on the face and scalp persisted several days, the tongue cleared off, the natural appetite returned, and the digestive organs resumed their healthy action. The mind, however, still remained confused, and for some days the excitement of company or of conversation, was sufficient to renew the delirium. It was necessary to have him kept secluded for nearly a month. About the middle of March, he began to mix with the other inmates of the hospital, and on the 7th of April he was discharged cured.

9*th*. *Delirium Tremens.* This disease, as met with in the hospital, is generally complicated with others. In fact, it might be considered rather as a disordered condition of the nervous system, superinduced by some local disturbance in persons of intemperate habits, than as a distinct and independent disease. At one time it occurs after a fracture, or severe injury, at another during an attack of erysipelas, of rheumatism, of inflammation on the chest, or of general derangement of the digestive organs. Nevertheless, it is occasionally seen in a simpler form; and when so, it is rarely or never difficult to manage. A brisk emetico-cathartic, in its forming stage, will frequently arrest it at once. Subsequent to the operation of this, which is best administered in the evening, if the patient is not disposed to rest, he may have not to exceed a drachm of tincture of opium in a draught of porter; but I prefer giving the opiate in the form of an enema. On the following morning I allow him either half a pint of porter, or a small amount of brandy, and oblige him during the day to exercise freely, and to actual fatigue, in the open air; eating, if he is so disposed, at the regular meal times; and at night again resorting to his anodyne. By following up this system I have never seen simple delirium tremens persist beyond a few days. But when complicated, it is often difficult to manage, and its prognosis then depends much upon the nature of the co-existing disorder. In the following case it was complicated with inflammation of the lungs.

Case XVI. — Contusion of the chest; bronchitis, pneumonia: delirium tremens.

George Brotherton, a pilot, aged 35, was engaged in a riot on new-year's eve, and got severely contused on the chest. The weather at the time was extremely cold, and the patient probably in a state of intoxication, was exposed to the open air all night. He was brought to the hospital on the evening of January 3d, at which date his respiration was short and laboured, he had a constant short dry cough, his lips and tongue were purplish, his skin cool, his pulse small and about 100. Considerable dulness existed over the posterior and lower part of both lungs, and the crepitating sound was marked on the inferior portion of the right lung. On the morning after admission he was bled moderately and put on antimonial solution.

January 5. The venesection produced instant relief from the impeded respiration; the antimony had not nauseated him in half grain doses every two hours. His skin was of natural temperature, lips florid, pulse 100, slight subsultus at the wrist, slight glairy tenacious expectoration, cough not so frequent, but still severe. Continue the antimonial solution with mucilaginous drinks, farinacious diet, and at night an anodyne.

January 6. Patient had not slept during the night, and was wandering about the ward delirious, sputa rusty, tenacious, and more abundant; minute mucous or crepitant sound on both sides of the chest, but most extensive on the right; marked delirium tremens. Antimony suspended, and tinct. opii administered (ʒij. every four hours) in the form of enema. The patient was also allowed a pint of porter, to be taken in divided doses during the day.

January 7. After the second enema he slept about four hours: delirium not so great, subsultus still continuing, pupils contracted, cough less troublesome, sputa thick yellowish mucus. No change of treatment.

January 8. Slept well during the night, mind composed, tremor as yesterday, pulse 112, cough less frequent; sputa again rusty and tenacious, though mixed with considerable mucus. Discontinue the porter, resume the antimonial solution, and repeat the enema only at the proper time for repose at night.

January 9. Patient asleep, considerable twitching of the muscles, pulse 108. He had slept little or none during the night; expectoration mucus tinged with blood; dulness on the posterior part of the chest, apparently greater than at last report; mucous sound loudest on the right side. Up to the present date the patient has had no appetite, and the antimony has acted freely on the bowels. R. Tinct. opii gutt. v, to every dose of the antimonial solution. Cups were applied to the chest, and the enema directed as usual at bedtime.

January 10. Slept badly; delirium and tremours increasing, pulse 112, cough and state of the chest as yesterday, diarrhœa continues; slight epistaxis. Continue the internal treatment.

January 11. No sleep; subsultus delirium, and diarrhœa continuing; pulse 110, skin moist; the tongue which had hitherto been moist and tolerably clean, was now somewhat coated; congestion apparently increasing in the chest. R. Tinct. Sanguinar. ℥j. Tart. Ant. grs. iv Mucilage ℥ij. Mix. Dose ʒss. every two hours. The usual anodyne enema at night.

January 12. Five liquid stools since last report; pulse 112, skin moist and warm; mucous expectoration; delirium and tremours continuing slightly.

January 13. Slept but little; three liquid stools since last report; delirium not noted, tremours diminished; tongue moist and clean; mucous sound free over all the chest.

January 14. Rested tolerably during the night: diarrhœa continuing; pulse 104, other symptoms abated. Suspend the antimony, and continue the sanguinaria, &c.

Subsequent to this date the patient continued to improve. On the 17th he began to ask for food. On the 21st he complained of severe pains about his left hip and leg, which were relieved by a blister over the trochanter. On the 6th of February he was discharged cured.

Remarks.—The stimulating treatment for delirium tremens was contra-indicated in this case by the state of the lungs: the inflammation of the chest, on the contrary, could not have been treated safely by active depletion, in consequence of the condition of the nervous system. A temporising plan was therefore adopted; and, as shown by the result, with success.

10*th.* *Tetanus.*—Of the two cases of tetanus, one died in a few minutes after admission; the other recovered. And as every successful case of this formidable disease is worthy of record, I shall report this in full, together with another successful case which occurred some time since in my own practice.

Case XVII. — Tetanus cured by the use of assafœtida, brandy, and tincture of rhubarb.

Joseph Hutchinson of New-Hampshire, aged 39, a remarkably athletic man, employed as fireman on board of one of the Providence steamers, was admitted with symptoms of tetanus on the 16th of June.

About two weeks previous he had abraded the skin on the side of his left leg, over the cicatrix of an old ulcer. Subsequent to this accident he had been much exposed to sudden changes of temperature; his berth was leaky, and his clothes had been frequently wet. About a week before admission he had injured one of his fingers, which was still sore, but he thinks the stiffness about his throat had commenced before this latter accident. He continued at work until the 12th June. On Saturday, June 13th, he complained of pain in his back and of weakness. On the next day he had cramps in different parts of his body, extending particularly from his back along the region of the diaphragm, and afterwards to the lower extremities. He now sent for a physician who bled him, and gave him some cathartic medicine, which operated freely during the following day.

When admitted, his jaws were firmly closed, but not so completely as to prevent him from protruding his tongue slightly beyond his teeth; the lower jaw was somewhat retracted: he had frequent spasmodic twitchings in his body and limbs; his skin was bathed in profuse perspiration. The spasms were most severe in the left leg, the patella appeared to quiver beneath the hand when placed over it. His abdominal muscles were rigid, his pulse was 90, his intellectual faculties undisturbed: his principal suffering was from the frequent recurrence of the cramps. The ulcer on his leg, produced by the abrasion, was in an irritable condition, and apparently spreading. R. Tinct. assafœtidæ ʒij. to be administered as an enema, and repeated every second hour. The ulcer was dressed with an anodyne and emollient poultice. Diet not restricted.

June 17. The patient had slept during the night, but never so long at a time as to require any intermission of the medicine. General symptoms as yesterday; spasms recurring every 10 or 15 minutes. In the afternoon they became excessively severe, throwing him into general convulsions. He was placed upon a bed on the floor to prevent him from falling. The enemata were now repeated at intervals of an hour, and the patient was further allowed a tablespoonful of brandy every second hour.

June 19. Spasms less severe and recurring about once an hour, invariably coming on when he is about to fall asleep, and thus disturbing his repose. The enemata keep his bowels freely opened. He complains of thirst, and of a parched and slimy state of his mouth, for which he was directed porter diluted with water, to be taken ad libitum.

June 22. Spasms gradually growing less severe: pulse varying from 100 to 110; patient has had some repose at night, and has taken mild nourishment. The enemata have produced much soreness in the rectum and about the anus, in consequence of which they were stopped, and pills of gum assafœtida, each containing three grains, were given by the mouth; one pill every hour; the brandy and porter were continued as usual.

June 25. Spasms less and less frequent and severe. The patient's bowels have not been freely moved since the enemata were suspended. Stop the brandy, and take tincture of rhubarb as a substitute, in doses of half an ounce every two hours.

June 26. Scarcely any spasms since yesterday: pulse 90, the rhubarb has acted gently upon the bowels.

July 6. Although he has had few or no spasms since last report, and has been able to sleep and to take regular nourishment of soft food; still the tonic rigidity of the muscles continues in most parts of the body. The patient is unable to move his legs, and passive motion gives him pain. To-day, for the first, the stiffness of the jaws suddenly left him: he felt, according to his own account, as if something had given way there. The ulcer in his leg had been for sometime improving under simple dressings, and was now nearly healed.

Subsequent to this date, the rigidity of the back and limbs gradually yielded; the gastrocnemii muscles of the left leg, however, still continued rigid, and kept the foot permanently extended; but these, at length, by insensible degrees relaxed, and the patient regained the use of his legs. About the 15th of July he began to sit up; his limbs, however, were still remarkably feeble; he was at first obliged to use a crutch in walking, and suffered severely in attempting to flex his joints. After this date his recovery was rapid: but he did not leave the hospital until able to resume his work, on the 19th of August.

The other successful case of tetanus was in some respects peculiar, and though it occurred in private practice, I am induced to report it here, in connection with the preceding. I cannot describe it more accurately at present, than by simply transcribing the notes that were taken upon it at the time of its occurrence. I may premise, however, that it was in its early stage looked upon as an approaching attack of scarlatina; this disease being at the time prevalent.

Case XVIII.—Tetanus, treated successfully.

NATHANIEL SCANLIN, aged 10, a boy of plethoric habit, was taken ill Feb. 15th, 1838, with pain in his head, sore throat, pain in his bowels, and in the small of his back. He left school, unwell, in the morning; and was unable to eat his dinner. His mother, supposing him about to have an attack of croup, gave him an emetic, which operated, and followed this with a dose of castor oil, which had not yet operated when I saw him, at 7 o'clock, P. M. I then found him with flushed skin, eyes rather heavy; tongue discoloured with liquorice, but showing slight elevation of a few of the papillæ. The sublingual glands were inflamed, swollen, and painful: the fauces red, no apthæ upon them. The patient complained of soreness of the throat; he was too feeble to walk about, but was active enough in describing his symptoms, and sat up whilst I examined him. I simply directed warm catnip tea.

February 16. About an hour after my first visit, he was seized with convulsions, which lasted all night. Mustard draughts had been applied without relief; another physician, who was called to him early in the morning, administered three grains of calomel and an ordinary enema. When I saw him at noon, the convulsions were still upon him, recurring every 15 or 20 minutes, passing off very suddenly and leaving him with general twitching, *like the twitching of tetanus.* His pulse was about 100, intermitting three or four times in a minute, and very weak. His skin was rather below the natural temperature. During the convulsions he did not froth at the mouth, and his respiration was performed by short, quick, and convulsive gasping. ℞. Tinct. Assafœtidæ ℥ss. to be mixed with an ounce of milk, administered as an injection, and to be repeated every second hour, while the fits continued. A warm bath was also given after the first enema.

5 o'clock, P. M. The enema had produced an immediate action of the bowels, and after its operation the child remained quiet for a longer time than at any former period since the commencement of the convulsions. Skin not above the natural temperature; tongue pasty and dark in the middle; pulse regular, weak, and at 102. The injections were continued, and the patient directed warm wine and water, made weak, sweetened, and to be taken as an occasional drink.

9 o'clock, P.M. Child sleeping soundly, pulse regular at 100; has taken his wine and water but once, and has not had a paroxysm within half an hour. During the intervals between the paroxysms, throughout the day, he has been rational; towards night he appeared to his friends to be at times delirious.

February 17, (in the morning at 9 o'clock.) The patient has slept well during the night; there have been three returns of the paroxysms within two hours; bowels moved three times since last visit, the evacuations being unhealthy and "like glue." Tongue pasty, and, over a red surface, coated with a thin white fur.

5 o'clock, P.M. Frequent returns of paroxysms, sometimes attended with swooning, which lasts a minute or more, sometimes characterized by twitching of the limbs, and sometimes by convulsions of the whole body. Whilst I was examining him, he suddenly clenched his fists, opened his mouth, stretched backwards, and had a severe general convulsion, with the spasmodic and rapid breathing noticed yesterday. During the fit his mouth remained open very wide, and his tongue retracted. Once or twice he bent forward as if to snap at the persons who were holding him in bed. The paroxysm lasted about two minutes, and then, suddenly leaving him, he sat up in bed, called for a drink, said his head was "all working," desired to have a bandage tied about it, and appeared as clear as ever. During the fit his pulse did not intermit; it had been all day about 96. He had a slight cough, and complained of pain in his side.

Although the symptoms have hitherto been of equivocal character, yet this morning supposing them to bear much analogy to those of tetanus, I questioned with that view; and found on the last joint of the right thumb, a small bruise about two lines broad and covered with a dry scab. He stated that this had been caused by striking his knuckles against a rough projecting point of the stove pipe, on the 9th instant, just six days before he became unwell. The wound, he added, hurt him shockingly at first, and pained him very much all next day, but he had thought nothing of it afterwards.

February 18. Slept tolerably during the night; four convulsions in the course of the day; throat not so sore as formerly; tongue clearing off; skin natural, pulse 84, bowels, not moved. R. Ol. Ricini ℥j; and if the fits return, resort to former treatment.

February 19. During the day better than usual, having had but three or four mild returns of the paroxysms. At night sitting up in bed, free from pain, playing with one of his little companions. Oil had operated freely, tongue quite clean, appetite returning. The symptoms of the case are certainly not those usually attending tetanus, yet this is doubtless the disease affecting him.

February 20. In the morning he had another convulsion, which lasted four or five minutes, and left him with some confusion of intellect, and slight injection of the eyes. He had a few drops of blood discharged from the nostrils. Bowels not moved since yesterday. Repeat the castor oil. At the evening visit I found that the oil had vomited him, and that he had had two slight paroxysms since the morning. Have sulph. magnes. ℥ss.

February 21. No return of paroxysms: the cathartic has produced healthy evacuations; patient apparently well.

February 22. No further returns of paroxysms. Discharged cured.

Remarks. — I have neglected to note in this case the date at which the assafœtida was suspended. Its effects were more decided on the first day than at any time subsequently, and it was entirely neglected towards the last.

As I had no knowledge of this article ever having before been employed as a remedy for tetanus, I was induced, by the successful result of this case, to try it again at the next favourable opportunity. The second patient to whom I administered it, was a lad aged 14, who had received a severe gun-shot wound, involving the right groin, right testicle, and upper part of the right thigh. The wound, which had been caused by the accidental discharge of a gun on the 25th of March, 1838, was of itself sufficient to have destroyed life. Symptoms of tetanus ensued, on the morning of the 31st of March, between five and six days from the date of injury; and the patient died on the day following. Owing to the state of the wound, the tincture of assafœtida could not be administered by the rectum. It was therefore given by the mouth; and was not carefully continued, the patient refusing it on account of the difficulty of swallowing.

The third instance in which this remedy was administered, was the fatal case referred in a former part of this report. The disease had existed several days, and the patient died of suffocation in attempting to swallow the first dose of the tincture, which was unfortunately administered by the mouth. The fourth case was that of Hutchinson, who recovered. It has since been employed in the hospital in another case, a female, a patient of Dr. Post, but without success.

Thus, out of five cases in which assafœtida has been used, two have terminated favourably; but how far this success is attributable to the treatment, is as yet impossible to determine. I have no doubt that many patients, suffering under this formidable malady, are over-treated; yet we are not in the habit of hearing of spontaneous cures; nor, indeed, of any great proportion of successful cases, even under the most judicious management. It is to be feared that no course of treatment can ever prove generally successful; hence any remedy that is attended even with occasional success, is worthy of the notice of the profession.

In resorting to the assafœtida again, I should prefer administering it by the rectum; but if this plan be inadmissible, it must be given by the mouth. Under these circumstances, the gum is preferable to the tincture, being less apt to excite spasmodic action of the muscles of the throat, and thus lead to instant suffocation.

11*th. Miscellaneous observations.* — The only remaining fact worthy of notice in connection with this report of hospital practice, is the following:

Case XIX. — Opium mixed with superacetate of lead, in large dose, swallowed with impunity.

A seaman under treatment for a carious ulcer near the lower part of the thigh was seized with slight erysipelatous inflammation around the surface of the sore, for which the house-surgeon prescribed an opiate lotion, to be made from thirty grains of opium, and sixteen grains of sugar of lead. The patient, mistaking the directions, swallowed these substances in their dry state, about 8 o'clock in the evening of January 26th. About midnight he began to feel unwell, and think he threw up a part of the powder; but he did not rest well during the night; no symptoms of narcotism followed the accident; on the following morning he was as comfortable as usual, and unaware that anything had gone amiss.

Is it possible that the superacetate of lead, which is known to precipitate the extractive matter of vegetable infusions, could in his case, have had any effect as an antidote? The opium was good, and the patient had not been in the habit of using this substance.

An instance somewhat similar happened in the hospital in the summer of 1837. A patient swallowed by mistake, a drachm of opium mixed with a scruple of the superacetate of lead. The accident was discovered in about half an hour; an emetic was administered, and no serious consequences ensued.

Memoir on the treatment of Varicose Veins of the Lower Extremities. By M. Bonnet, Surgeon in chief of Hotel Dieu, Lyons.* Translated from the French, By A. G. Thompson, Jr., M. D.

About the close of the year 1834, I began occupying myself with the radical cure of varicose veins. During the first two years that I was engaged in the study, I used pins on sixteen patients, whose veins were very prominent, and caustic potash on two females, their varices being covered by a tissue of fat. The two last were discharged cured, together with all those who, treated with pins, were in a state fovourable to a radical cure. These two methods of treatment, then seemed to me to be equally useful; but as hemorrhage had occurred, when the vein was opened by caustic potash, and as no serious accident had followed the use of pins, I decided to give preference to the latter. However, I deferred making a definite judgement, until I had followed during several months or years, the patients operated on according to the two methods, and I felt the necessity of prolonging this observation beyond the dismission of the patients, since the cases published by Davat, Velpeau, and Jobert, terminated with the immediate consequences of the operation. I must acknowledge that I was disappointed as to the efficacy of pins in producing a decisive cure. In all the patients, whom I succeeded in seeing again, the varices reappeared, after remaining cured, during a time varying from one to six months, with as much intensity as before the operation; and this not only in the secondary divisions, but in the trunks of the saphena, on which the greater number of pins had been placed, and where the obliteration seemed permanent. The two females treated with caustic potash, were more fortunate; in one, the varices had not reappeared fourteen months after the operation, and the other has remained without any change for several years, during which I have frequently seen her. These facts led me to consider the obliteration produced by pins, as only temporary in its effects, whereas the caustic potash caused a permanent closure of the vein, but was capable of exciting hemorrhage.

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* Archives Gènérales de Mèdicine, May — June, 1839.

Being thus induced not to use either of these two agents independently, I thought that all difficulty might be surmounted by combining them. I conceived that by placing the pins at intervals along the course of the vein, and cauterizing the intervening spaces, I would obtain by the pins a temporary closure, which would prevent hemorrhage, and by the caustic potash, a permanent obliteration, which would effect a cure. This idea was put in practice on nine patients during the year 1837. Unfortunately I did not see any of them again, and the uncertainty in which these unfinished observations left me, joined to preoccupations caused by more serious operations, led me to interrupt my labours on the treatment of varix. I was obliged to resume them about the middle of 1838, at which time, I had under my care a man with ulcerated varices, giving rise to copious hemorrhage. I no longer had any confidence in the pins; I found the combined treatment too complicated; the fatal accidents which I knew had followed the employment of Mr. Davat's method in the hands of most skilful surgeons, decided me not to make use of it either simple or combined. I returned then to the caustic potash, the more so as I had reasons for believing that the hemorrhage which had deterred me from using it, could be prevented by compression, and by keeping the patient in bed. I then commenced a new set of observations on twelve cases, which confirmed me more and more in the opinion, that of all the means to which I have resorted in the treatment of varicose veins, caustic potash is the most simple in its application, the least doubtful in its results, and the best calculated to insure a complete and permanent cure. It will be seen after this preamble, which seemed to me necessary for the comprehension of this essay, that the observations on the treatment of varix should refer first, to the use of pins alone; second to the use of caustic potash alone; third to the combination of both.

The case of one of my patients cannot be strictly placed under either of these heads. I first operated on him with pins, and the second time I used these in combination with caustic potash. He had been operated on by Dupuytren, by incision, previous to my first trial, and during the time between my two operations, a portion of the saphena was resected by M. Gaillard of Poitiers. This man carried as it were, written on his leg, the methods employed during these latter years, for the cure of varicose veins.

The question of therapeutics, it will be seen, is the principal object of this essay. But before touching it, I would make some observations on a point of pathological anatomy relative to varicose veins, and on a symptom by which we may determine their danger, and the effects of the treatment used on them; I intend speaking of those tumours of the veins which are analogous to the spontaneous aneurism of the arteries, and of the motion which can be given to the blood in varicose veins, in a contrary direction to the course which the valves compel it to take in the healthy state.

Varicose tumours analogous to spontaneous aneurisms. This particular form of dilatation of the veins, has not been well described by any author. I observed it in 1833 on a young man aged 24, whose internal saphena was dilated in its trunk and principal divisions. Two years after the first appearance of his varices, a tumour showed itself about the middle third of the thigh, on the track of the internal saphena, which was of one year's standing, when I first saw him in March, 1833.

This tumour was soft, fluctuating, and indolent, about the size of a hen's egg, and covered by a perfectly healthy skin without adhering to it, incommoding the patient only by its weight. I removed it by making an incision through the skin; but when by the last stroke of the bistoury, I detached it in its deepest part, a quantity of blood escaped, and on examining the bottom of the wound, I saw that I had opened the internal saphena. I united the lips of the incision, and union took place without any accident.

The tumour contained liquid blood, mixed with a quantity of soft and blackish coagula. Its cavity was smooth, and communicated with the vein by an opening three or four lines in diameter. Its coats were continuous with those of the veins, on the side of which it was situated.

Being enlightened by this observation on the anatomical characters of lateral dilatations of the veins, I became attentive in noticing their symptoms on other patients submitted to my observation. I have since only met with them in two cases, and in both they were situated on the crural portion of the internal saphena. The first of these patients had two soft indolent tumours, about the size of a walnut, situated on the track of the saphena, one being towards the mouth of this vessel, a little above, and to the inside of the knee. By percussing one of these tumours, the blood flowed back along the whole vessel, and if the hand was placed on the other, a distinct pulsation could be felt; in fact this was visible to the eye; this reflux and pulsation seemed to be the marked character of these tumours, because it proves that the liquid contained in them freely communicates with that in the veins. I noticed the same thing in the second case; the tumour had the same character and volume, as the preceding.

These cases were treated by passing a pin through the tumour, which was kept in place by the twisted suture for eight days. From the second day after the operation, the blood began to coagulate; on the eighth day the tumour had become hard, and about one month afterwards had gradually diminished, while it acquired a firmer consistence, being at that time reduced to the size of a hazlenut. In the first case, in which there were two tumours, the one near the knee was operated on; its cure with that of the varices of the saphena, to which five pins were applied, brought on the resolution of the other tumour situated in the bend of the groin. I have not been able to ascertain the duration of the cure in this case; but as to the other patient, whom I saw eighteen months after treatment, although the saphena was again dilated, the lateral tumour continued perfectly cured, and was so completely dispelled, that no trace of it was perceptible. (*See Case IV.*)

From these facts, I thought that I might draw the conclusion that whenever one of these dilatations is found occupying but one side of a vein, it may be easily diagnosticated, and be treated with every chance of success, by simply passing a pin through it. The inflammation caused by this foreign body, coagulates the blood, its serosity is gradually absorbed, and similar to an aneurism through which the current of blood is interrupted, it becomes reduced to an coagulum, which may terminate in resolution. It is not necessary for me to show how far this treatment is superior to that employed on the first patient, from whom I removed the tumour, thinking it to be a cyst compressing the saphena. The sign which I indicate — the facility of diminishing the tumour by pressure, and of causing the blood it contains to pass into the trunk of the vein — proves how the error into which I then fell, may be avoided.

On the motion of the blood caused by percussing varicose veins. One of the characters of varix to which I would call attention, is the possibility, when the vein is largely dilated, of causing the blood to flow back towards its origin and termination, by percussing the vein in any part of its extent. This reflux of the blood, in a contrary direction to that communicated to the veins by the valves in a normal condition, proves that they have ceased to act, either because the dilatation will not permit their free edges to reach the axis of the canal, or because they have become effaced during the dilatation and extension which the vein undergoes, or because they have become thickened like the coats of the vessel. These causes have appeared to me united in the dissections that I have made ; the reflux, which is the consequence of the loss of action which they produce in the valves, is important to know, and ought to be carefully examined, in order to judge of the difficulties which the cure of varices may present, and particularly to ascertain when the pins are properly placed : for if the opposite sides of the vein are well compressed by them, the motion of the blood, which, before their application, passed the places they occupy, becomes arrested at that point. This sign ought to be looked for at the termination of treatment. We judge whether the motion communicated to the blood by percussion stops at the portions of the vessel we desire to obliterate, and thence whether the means we have used are sufficient, or whether it will be necessary to resort to them anew.

SECTION 1. — TREATMENT OF VARICOSE VEINS WITH PINS.

Several surgeons, among others Davat, Velpeau, and Jobert, have published the results which they have obtained by the single application of pins in the treatment of varicose veins. Their observations show the possibility of success ; but they have not specified the cases in which this method has failed, and when it does succeed, to what extent the cure is permanent. Neither have they insisted on the fundamental principles which should regulate the treatment of varices with pins : these are the points which I shall endeavour to elucidate.

In the treatment of varix, the veins should be obliterated in several places separated from each other by short intervals.

From the moment that I commenced applying pins in the treatment of varix, (1834) I was led, on reflection, to establish the principle that the radical cure of this disease cannot be obtained unless the veins are obliterated at intervals, and consequently not unless the means resorted to for the purpose of causing adhesion of the coats of the vessel are applied several times along its course. As this principle is of the greatest importance in the treatment of varix, I think it necessary to offer a few reflections which will render the justness of it perceptible.

It is incontestable that when the internal saphena is obliterated in one point, at the inferior part of the thigh for example, the column of blood which presses against the sides of the veins in the leg, is diminished by the whole length of the thigh, and the force which distends their cavities being thus weakened, they may collapse: the observations of M. M. Richerand, Beclard, and Davat, tend to prove, that in some cases coagulation extends to the small ramifications, and that the radical cure is the distant consequence of the impermeability of the vessel in a single point of its course. But most frequenlty the communications which exist between the internal and external saphena, between the femoral and crural portions of the first of these veins, allow the circulation to continue below the obliteration, prevent coagulation of the blood and consequently the cure of the varices. Several observations from different authors may serve to demonstrate this truth.

J. L. Petit* speaks of varicose veins in which a spontaneous coagulation took place, and far from diminishing under the influence of this partial obliteration, they increased in the already diseased parts, and extended to the healthy ramifications.

The 51st observation of Hodgson, is of a patient whose varicose veins of the legs and feet increased consequent to a spontaneous obliteration of the saphena.

Sir Everard Home mentions a case in which the same increase took place subsequent to tying the principal trunk.

I saw in the Hotel Dieu of Lyons, a patient, whom Dupuytren had attempted to cure by incising the internal saphena to the extent of two and a half inches at the middle third of the thigh. The vein was perfectly obliterated, but below this obliteration the varices had scarcely diminished in size. I shall revert to this case. (*Case II.*)

In fine, the young man from whom I removed a varicose tumour together with a portion of the internal saphena, experienced no amelioration in the varices of his legs, although the obliteration of the vessel was the result of this operation.

In opposition to these unsuccessful cases, when the vein was only obliterated in one point, I will relate the following facts.

In the only well marked case of recovery which Hodgson reports, four ligatures were placed on the branches of the varicose vein, four days intervening between the application of each.

Celsus, who applied the actual cautery at different times along the course of the dilated veins, was probably led to the repeated application of this agent, by observing that the cure did not follow the single employment of the remedy, while it was permanent after several renewals of it.

Finally, all the observations that I have made on the obliteration of veins, whether with pins or caustic potash, have only confirmed me in the opinion that the dilated veins ought to be obliterated in several places. I have always noticed that coagulation of the blood and constriction of the vessel only occurred in the vicinity of the obliterations, while the distant venous branches, which had been made quite impermeable to the blood by the operation, remained almost as much dilated as before, and were tumefied by walking and violent exercise. (*Cases II and IV.*)

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* Traité des Maladies Chirurgicales, t. ii. p. 43.

Convinced of these facts from the commencement of my researches on varix, I have always multiplied the points of obliteration as much as possible, placing from four to ten pins on the same patient, some along the internal saphena at intervals of three or four inches, others at the mouth or in the course of the principal branches terminating there.

Methods of applying the pins. — The pins may be applied to varicose veins according to three methods, of Davat, Velpeau, and of M. Fricke of Hamburgh.

According to the method of M. Davat a pin is first passed under the vein perpendicular to its axis, through the skin; the vessel is then raised by clasping the two ends of this, and another pin is passed through the vein from above downwards, and from below upwards. In this manner the pins cross each other at right angles, and are kept in place by passing a ligature under their extremities.

The complication of this plan of treatment prevented me from using it in all its particulars; but as the varices on which I have operated, were mostly oblique to the axis of the limb, I have performed the fundamental point in the operation; perforating the veins twice and bringing their sides in contact in the pricked parts.

M. Velpeau's plan of treatment consists in passing the pin transversely under the vein without wounding its coats, and in keeping it fixed by the twisted suture.

M. Fricke passes the pin through the cavity of the vein and leaves it there to act as a foreign body, producing adhesive inflammation.

I preferred the treatment of M. Davat, although it was the most complicated and difficult in execution; it seemed to me the best calculated to insure permanent obliteration. In passing the pin through the vein as M. Fricke advises, inflammation only is produced; introducing it under the vessel and fixing it by the twisted suture, according to M. Velpeau's plan, causes inflammation and compression; by following M. Davat's method inflammation is brought on, together with compression and contact of the coats of the veins at the points perforated by the pins.

Length of time for leaving the pins in place. — I never waited until suppuration commenced before removing the pins: whenever tumefaction and redness was apparent and when the patient complained of much pain, I cut the thread securing them and removed them if the swelling was very sensible and the pain sufficient to disturb the sleep. The time required for the development of the inflammatory symptoms, varied from three to fifteen days. This difference seemed to depend 1st, on the age of the patient: the progress of inflammation is greater in young than in old persons, developing itself with slowness in the latter; 2d, on the spot where the pins were placed; those pins applied near the malleoli, or the saphena nerve, appeared to produce more pain and more speedy inflammation. But it sometimes happens that a pin placed on any part of the leg, may produce more pain, or cause inflammation sooner, than those around it. This probably depends on some nerve which has been raised by the pin and compressed by the thread securing it; 3d, one of the causes which most influences the promptitude with which inflammation is produced, is the kind of life which the patient leads. Those who deprive themselves of nourishment during the first two or three days, or eat only slight soups, and do not leave their beds during the continuance of the treatment, may though young and robust, reach the twelfth day of treatment without tumefaction appearing and without any other symptoms manifesting themselves, excepting a few darting pains in the parts pricked by the pins, particularly the first days after the operation.

In one case, neglecting to remove a pin which gave much pain, and which had caused, on the fourth day, a tumefaction about the size of a franc, a vivid inflammation was produced in the superior portion of the leg, terminating in a phlegmon, which was only prevented from suppurating, by the repeated application of leeches, and by early incisions on the most inflamed parts.

This example induced me to follow the prudent plan which I had adopted, of removing the pins before the commencement of suppuration, and I was more strongly confirmed in this opinion, on learning that serious accidents had occurred in cases operated on by M. M. Velpeau, Lallemand and Serres.

Results obtained by treating varices with pins. — Sixteen patients were treated by this method: it would be easy for me to cite all the cases, but I will only relate, in a general manner, the results obtained. In order to do this with precision, I shall divide these cases into three series, characterized by the anatomical conditions of the varicose veins.

In the first series, I rank those affected with simple varices, without ulceration, without œdema, and whose dilated veins could be easily followed throughout their course.

In the second, all those having dilated veins, so knotted that it was impossible to distinguish their course; they resembled according to the comparison of J. L. Petit, the convolutions of the intestines.

In the third series, I place all whose varicose veins were accompanied with œdema, and imbedded in a quantity of fatty tissue. These two conditions may exist separately; they were united in two females on whom I operated.

There are eleven cases belonging to the first series; two of whom were of feeble constitution, and over 63 years of age. Their cure was only temporary, the blood did not coagulate in the intervals between the pins, and even previous to their dismission, the obliteration, the existence of which I had determined by the blood being arrested, even after the removal of the pins, was completely destroyed. These facts should not surprise us: in advanced age the blood does not tend to coagulation, nor does adhesion take place, and it is questionless, that it is unnecessary to attempt curing varicose veins in patients over 60 years of age, who do not maintain an unusual degree of vigour. Physiology and experience foretell in these cases, complete insuccess.

The other nine patients placed in the first series, were, with a single exception, (case viii,) under 54 years. They left the hospital cured. The blood was coagulated throughout the extent of the varicose veins, which were diminished in size, and walking, continued for several hours, did not produce engorgement of them. But, unfortunately, this success was merely temporary. Of these nine patients, I again saw five; in two cases the veins began to swell, and became permeable to the blood as soon as they returned to their occupations; in two others three months, and in the fifth case, (case iii,) six months after leaving the hospital. In all, only one or two months more were necessary to restore the dilatation to what it was before the operation.

The patients placed in the second series experienced a marked amelioration, and left the hospital nearly cured. Only a few venous branches became enlarged by walking. I saw one of them 15 months after cure — the man of whom I have already spoken as having been operated on by Dupuytren. The trunk of the internal saphena had become almost as large as before using the pins. As to the two who had voluminous veins imbedded in fat, and spread in great numbers over the whole leg and back of the foot, consequently affecting both saphenæ, although I placed 12 pins on the one and 14 on the other, which were removed from the eleventh to the fifteenth day, I did not obtain even a momentary amelioration. One of these patients was aged 60, the other 42 years. Thus I have not obtained a temporary success in patients debilitated, and advanced in years.

Of the 12 patients, whom I considered cured when they left the hospital, six whom I have again seen, experienced a relapse after a longer or shorter time: among these were those whose veins were the most inflamed after the operation, and whose cure appeared to perfect. It is then probable that the same relapse has happened to the others. What causes these relapses? How is it that veins which were closed can again become open? This is a question worthy of solution.

How do obliterated veins become pervious to the blood?

Phlebitis obliterates the veins, 1st, by infiltration of serosity in the surrounding cellular tissue, and into the body and on the surface of their proper coats; 2d. by the secretion of matter capable of organization in the same parts; 3d, by coagulation of the blood.

When all these causes are united, the circulation is interrupted in the inflamed vein; but the changes which succeed when inflammation ceases, show how the circulation may be rëestablished.

The serosity infiltrated in the cellular tissue and in the coats of the vein is absorbed; the volume of the vessels, and the compression exercised on them diminishing, their cavities necessarily enlarge, the secreted matter passes to the state of fibrous tissue, and by this transformation is reduced to a size which in comparison with that it had at first, is as a cicatrix compared to the granulations preceding it. This new cause of diminution in the sides of veins and of the compression exercised on them, acts more slowly than the absorption of the serosity, but is not any the less real.

Even when these two changes alone take place, they contribute enough to the dilatation of the veins to cause an interval between them and the coagulum.

This coagulation is daily diminished by the absorption of the serum which particularly gives it its volume. It becomes reduced to its fibrine, which does not form its hundredth part, and from that time the space existing from the other causes, between it and the sides of the veins, increases sufficiently to allow the blood to circulate freely. This effect could without doubt be prevented if the coats of the vessels contracted in proportion as the coagulum diminished in size; but this contraction has no tendency to occur in a fibrous tissue so inelastic as that into which a varicose vein is converted.

M. Davat, while he admits these ideas, assures us that by his treatment an inflammation is produced which causes adhesion between the opposite coats of the vein by fibrous tissue, and that this adhesion is indestructible, as his experiments on the veins of dogs prove. But it is important to make an observation which explains why the obliteration by adhesion obtained in dogs, cannot take place, or at least requires a very active inflammation in varicose veins. These veins have not their normal texture; they are converted into fibrous tissue, and like this tissue their coats have but little tendency to secrete matter capable of being organized, and consequently to adhere to each other; the inflammatory symptoms go on more in the healthy cellular tissue surrounding them than in their substance.

These are the reasons which clearly explain this want of adhesion, and these temporary obliterations which seem so strange at first sight.

SECTION II. — TREATMENT OF VARICOSE VEINS BY CAUSTIC POTASS, COMBINED WITH PINS.

In the application of this method of treatment, I have always followed the following rules, which are highly important and deserving of the strictest attention.

1*st. In the treatment of varicose veins with caustic potass, several pieces of this substance should be applied along the course of the dilated veins at intervals of three or four inches.*

This proposition is only the reproduction of that which I have fully discussed in speaking of the application of pins to varices; there is no necessity of proving it again. The cases to be mentioned presently clearly demonstrate it.

2*d. Caustic potass must only be applied to the veins in the situations where they are in connection with muscle.*

Every one knows with what difficulty ulcers on the foot and lower part of the leg cicatrize, and with what facility they open after healing; hence we learn with what care we should avoid applying caustic potass below the calf of the leg, where the veins are situated so near to the bones. The only parts where we may place it, are on the superior half of the leg, and inferior half of the thigh.

3*d. The caustic potass should be applied at least twice in the same place in order to reach the vein.*

The observation of all the patients whom I have treated, has convinced me that in order to obliterate the veins, it is necessary to arrive at and open them with the caustic potass. After the first application, which only destroys the skin and a little cellular tissue, the motion of the blood in no case ceased in the veins, and they are not converted into a hard cord impervious to this fluid. It is only after their opening that these changes occur.

Now if it is necessary to reach them, is it better to do it by immediately applying a large piece of caustic potass, or by making two successive applications of it, the second in the centre of the slough produced by the first? The answer will not be doubtful, when we reflect that it suffices to open the vein and to destroy it to the extent of a few lines, and that, this end obtained, farther destruction is useless. Now it is very evident that if we at first apply a piece of caustic potass large enough to cauterize the vein, we shall have a large slough of the skin; while if we place successively in the same spot two pieces of caustic potass, we will go as deep without attaining so great a surface. We can wait two or three days before placing the caustic potass afresh in the centre of the sloughs.

In order particularly to deepen the excavation, a crucial incision should be made in the slough, and the potass placed at the bottom of it. Hemorrhage occurs after this second application. But in some cases, whether owing to want of attention in not placing the caustic immediately over the vessel, or to the weakness of the potass, or to the depth of the vessel, it happened that after the second application no bleeding took place, which proved that the vein had not been opened; a third application, however, always sufficed.

These principles have guided me in the treatment by caustic potass, whether used alone or in combination with the pins. At the time when I employed this combination, I applied a pin above and below each cauterization, passing it under the vein, in order that it might be compressed between the pin and the thread securing it in place. I also applied pins to the veins in the inferior part of the leg, in case these vessels on which I was afraid to use the caustic potass, were themselves dilated.

Having laid down these rules, let us now pass to the study of the results.

It would be natural to report at first the cases treated solely with caustic potass, and then those in which I used the combination of this agent with pins. I shall, however, begin with the latter, wishing to reserve for the end of the essay, the exposition of the method which I prefer.

I shall make a distinction, as in the first series of observations, between the aged and adults. In twice applying this method to men advanced in years, I yielded to the attraction which we experience in employing a new remedy; the limits of possibility then seem so extended that we try the strength of art, even in cases where physiology and previous experiments show us the least chances of success.

Case I.—Benoit Jeannot, turner, aged 69, had been affected for seven years with dilatation of the internal saphena, which was several times folded on itself at the level of the inferior third of the thigh, and two superior thirds of the leg. The foldings of this vein formed quite large knots, particularly on a level with the knee. The valves had so much lost their action, that pressure on a portion of the vessel caused reflux of the blood above and below the point pressed on.

Several days after his admission to the Hotel Dieu at Lyons, where he came to be treated for ulcers situated near the malleoli, I applied four pins according to M. Velpeau's method. The first of these pins was placed at the middle third of the thigh, the second above the condyles of the femur, the third above the condyles of the tibia, and the fourth at the middle third of the leg. The patient kept his bed and only took a little soup ; no pain of any consequence was developed before the sixth day. At this time two pieces of caustic potass were placed along the course of the saphena, one between the two upper, the other between the two lower pins. Three days afterward, caustic potass was again applied in the centre of the sloughs formed by the first application. However, notwithstanding the simultaneous employment of pins and caustic potass, no inflammation appeared, either because the patient was in a constant state of repose, or because his advanced age did not prodispose to inflammation. It was not until the twelfth day that a little swelling and redness appeared around the pins, which I removed between the thirteenth and fifteenth days. No bleeding from the cauterized parts occurred. The sloughs separated from the twenty-sixth to the thirty-second day of treatment. From the eighth day the vein became hard in the intervals between the pricked parts, and the motion of the blood was no longer perceptible in this situation. It daily diminished in volume, and when the patient left the hospital, seven weeks after the commencement of treatment, the exercise which he had taken for several days previous had not caused swelling of the veins. If I had not known how difficult it is to obtain a cure in old people, I would have considered him cured. He went away very contented, but when I saw him five months afterwards, the veins were again enlarged and pervious to the blood ; the free circulation of this fluid was observable not only where the pins had been placed, but also where the caustic potass had been applied. Evidently the caustic had not penetrated deep enough, and perhaps had not reached the vein. In order to be certain of this, it is necessary that a few drops of blood should appear, — this did not occur. The treatment then was not as complete as it might have been.

Although in the above case, the use of caustic potass was not pushed far enough to obliterate the vein, and though it may not have been applied with the precautions which permit us to judge of the treatment when well made, yet I have reported it in order to confirm what I said in the first part of the memoir, 1st, as to the slight tendency to the production of inflammation after operations on the veins in old persons ; 2d, on the possibility of the return of varicose veins treated by pins, (for it is under this mode of treatment that the above case should be classed,) in the cases where the cure appears most conclusive.

Case II.—Prow, carpenter, had varicose veins of his left leg, which were treated by Dupuytren in 1832, by a longitudinal incision of the internal saphena at the middle of the thigh. In 1835, his veins being uncured, I pierced them with a number of pins. In 1836, the cure by this method not continuing, M. Gaillard of Poitiers, removed a portion of the saphena, an inch in length near the knee; finally I operated on him in 1837 with pins and caustic potass combined.

The incision which Dupuytren made, had opened the internal saphena longitudinally in the middle of the thigh. The cicatrix of this incision was two and a half inches in length, and had obliterated the vessel. Consequent to this operation the patient experienced some relief in his varices, they became smaller, but the effects of the operation were limited to this simple amelioration.

When I first saw him in March 1835, he was aged 59; the internal saphena was dilated along its whole extent, its branches which are distributed over the calf and anterior surface of the leg, were nearly as large at their orifices as the principal trunk, and were so interlaced with each other as to form an inextricable network. I placed six pins in the middle of them at distances of three or four inches. One alone caused considerable pain; this I removed on the fifth day; the others were withdrawn on the eighth day. At this time the obliteration of the veins was complete in the places which the pens had occupied, but in the intervals the blood was still fluid; in seeking to displace it by percussion, it was seen to be arrested by the adhesions, however some unobliterated vessels seemed always to give it an outlet. About the eleventh day the patient having risen, the increase in the size of the vessels produced by standing and walking, was less than before the operation, but was still well marked. On the sixteenth day, observing that the blood still remained fluid in the intervals between the obliterated parts, I placed four pins in these spaces, which were removed nine days after, that is to say, on the twenty-fifth day of treatment; adhesion had taken place, and coagulation began to be manifest; it seemed complete on the thirtieth day. However, walking caused a slight increase in the volume of the varicose veins; and when I saw him twelve days after leaving the hospital, although the tumefaction produced by exercise was inconsiderable, though a hard mass was perceptible in the situation of the vessels, yet the leg continually increased a little in volume.

He left Lyons in this condition in June, 1835; walking did not make him suffer, and his veins swelled less than ever. However, their increased size obliged him to enter the hospital at Poitiers, in November, 1836, where M. Gaillard removed a portion of the saphena, a little above the knee joint. The cicatrix of this incision was about 12 or 15 lines long.

This resection, like the incision of Dupuytren, was followed by a complete and permanent obliteration in the spot where it was performed, but, excepting a slight and momentary diminution, the varices of the leg remained as before. In the month of April, 1837, the patient returned to the Hotel Dieu, at Lyons. With the exception of the obliteration of the saphena on the thigh, he was in the same state as before the first operation I performed on him two and a half years previous. He was now over 61 years of age.

I commenced, at that time, the combination of caustic potass with pins, and fearing that the two together might produce too much irritation, I first placed the pins, wishing to wait until they were removed before applying the caustic potass. Two pins were applied on the internal saphena, one above, the other below the calf; I did not withdraw them until the twelfth day. The vein was closed in the points where the pins had been placed, but the blood was fluid in the interval. On the fifteenth day, I placed another pin on the vein between the two first, at equal distances from each, and the sixteenth day a cautery was applied in each intervening space. I had also applied on the fifteenth day, a pin on the veins of the calf, which were much dilated. At the time when these applications were made, erysipelas was epidemically occurring, and this disease came on about the twenty-fifth day of treatment. The ulcerations produced by the caustic potass increased, and this prevented me from reapplying it. The erysipelas was cured about the middle of the fifth week. A few days afterwards the patient began to walk; the veins were collapsed, and could not be felt in the two superior thirds of the leg. At the inferior third they were only diminished in volume. Perhaps the cure in this case would have been perfect, if several pins had been placed on the veins of the malleoli and feet.

Be it as it may, this patient had never been so much relieved as after this operation. At the end of the second month, which he passed in the hospital, he walked from morning to night, and the veins of the feet and the lower part of the leg alone swelled, although not less than before the first operation; the others were perfectly obliterated. I have not seen him again since he left the hospital.

These two cases serve only to judge incompletely of the effects of the combination of pins and caustic potass, for in neither was the vein opened. It is to be remarked that, while with pins alone, I was unable to obtain even a momentary cure on two old persons, one aged 63, the other 65, whose cases are mentioned in the first part of this essay, I have procured so much relief by the combination, that Prou, aged 61, was as perfectly cured as he could be, by limiting the applications of this treatment to the calf, and that Jeannot, aged 69, left the hospital with every appearance of a perfect cure, which did not continue, because the potass had not effected the destruction and permanent obliteration of the veins.

The other four patients, on whom I applied the pins and caustic potass, were not so advanced in years as those just mentioned. The results of these cases was more satisfactory. After assuring myself by the preceding observations, and by others to be mentioned, of the complete absence of hemorrhage, when the use of pins is combined with that of caustic potass, I wished to find out whether I had not exaggerated the danger of it.

Case III.—A young man, aged 29, had been for two years subject to very large varicose veins, which had twice ruptured. They occupied the trunk of the saphena, and its principal branches at the inferior portion of the thigh and two superior thirds of the leg. It was in this last point that the folds of the veins formed a tumour, which had given rise to hemorrhage. Two pieces of caustic potass were applied over the trunk of the saphena, one on the thigh, the other on the leg. No painful inflammation occurred for eight days. At the end of this time I renewed the caustic potass in the centre of the sloughs. Nine days after this last application, the seventeenth day of treatment, the patient pricked the centre of the sloughs with a pin, and then got up to go to the close stool, when a hemorrhage came on, which was so copious that the blood flowed as in a good bleeding. It was arrested by compression and a horizontal posture. A few hours after this, I applied three pins on the saphena, one an inch above the superior slough, another at the same distance below the lower slough, and the third between the two. These were removed 13 days after application; they had not produced any active inflammation; the coagulation of the blood, which had commenced even before their application, went on with still greater rapidity. The patient left the hospital five weeks after the commencement of the treatment. I saw him four months afterwards: the cure perfectly maintained itself, the veins did not tumify, even after prolonged labour; and no one would have supposed he had ever had varicose veins.

The other three patients were operated on with all the precautions indicated in treating of the method in general. On two of them I applied two pieces of caustic potass, on the others three. Each piece was placed between two pins, and twice applied to the same spot. With the exception of a phlegmon which was easily circumscribed; no accident occurred in any of these cases. One was aged 26, another 55, and the third 45 years. They were all discharged cured; but as I have not seen them again, I do not think it necessary to detail their cases. Experience has taught me not to consider my observations completed when the patients leave the hospital.

The second series of my observations on varicose veins, remains incomplete, inasmuch as I have been unable to follow the cases for any length of time. I have reported them, because several, as the two first, serve to demonstrate some ideas which I have advanced in the first part of the memoir, on the difficulty of curing varicose veins in old people, and on the inutility of obliterating the veins in a single point, and because they may be added to those which I shall presently cite to show the harmlessness of applying caustic potass to the veins, even when it penetrates their cavities.

Section III.—Treatment of varicose veins with caustic potass.

I have used this treatment on 14 patients, with different results as regards the cure of the varices, but always without phlebitis, or any serious accident.

Caustic potass applied to the veins does not expose them to phlebitis.

In expressing this opinion, I do not mean to say that caustic potass is not productive of inflammation in the walls of the veins: the inflammation limited to the parts surrounding the sloughs is the necessary consequence of the cauterization, and without it, the immediate object of treatment, the obliteration of the vein, would not be obtained. I only mean to say that the use of caustic potass does not expose to the phlebitis, which propagates itself from the operated part to the venous trunk, and produces those serious accidents which we so often observe to follow incisions of the veins.

In advancing this proposition, I rely on facts observed in 14 cases, in which I used potass alone,* and in six more, where it was combined with pins. In these 20 cases no symptom has shown that the inflammation propagated itself through the veins, although three or four applications of potass have always been made, which most frequently opened their cavities. The only precautions taken were to keep the patients in bed; all of them continued to follow their usual diet, eating the half or three-fourths of the hospital portion.

In addition to the facts which I possess, I doubt not that the general facts of science agree with those which I have cited. These facts show that cauterization limits all inflammation which has a disposition to extend. In croup, which commences in the pharynx, if we cauterise this part, the production of false membranes does not extend to the larynx and trachea; it remains limited to its point of departure. In ulcers, which increase one after another, as in those of a syphilitic nature, nothing is more efficacious, nothing more suitable to limit the ravages of the disease than cauterization. The same observation holds good in hospital gangrene, in which the actual cautery is so powerful; in phlebitis consequent to bleeding, which is sooner arrested by cauterization than by any other means.

Besides, let it be remarked, that during epidemics of erysipelas, when all incisions, even setons, bring on this disease, we seldom see them developed around cauteries. Let it be remembered that we daily place cauteries on the thigh and on the leg, where they may come in direct contact with the saphena, which doubtless sometimes happens, without producing serious accidents, and we shall be convinced with this mass of proof, that the application of caustic potass on the veins is not dangerous, and that it is less to be feared than any other operation for the radical cure of varices, since there is not one of them which does not expose to phlebitis, and consequently to death.

The application of caustic potass is followed by circumscribed inflammation, and by ulcerations which are slow in cicatrizing.

The inflammation which is developed around each slough produced by caustic potass, the ulceration that follows the separation of the eschars, are perfectly similar to the circumscribed inflammations and ulcerations of all cauteries of the thigh and leg, only the inflammation is more active and the ulceration deeper, as two pieces of potass are successively applied in the same spot.

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* I could add to these fourteen cases, the observation of seven more, whose treatment commenced as I was finishing this essay, and who have not experienced any accident which can make me fear phlebitis.

When the pieces of caustic are applied too near to each other, the inflammations surrounding each slough unite and form a true phlegmon, as in the following observation :

Case IV.— Barraud, locksmith, aged 45; had had the internal saphena vein in a varicose condition throughout the leg, during three years. This vein was knotted, and formed varicose tumours, through which its course could be followed. Its collateral branches became developed when the patient stood up. Stasis of the blood soon extended from the venous trunk to its capillary branches, and his leg became so heavy and large, that he was obliged to discontinue labour at the middle of the day.

At the internal part of the knee, in the course of the saphena, there was a tumour of the size of a walnut, which almost entirely disappeared under continued pressure. The action of the valves was so abolished, that coughing produced engorgement in the veins along the whole course of the saphena, to the inferior part of the leg.

In order to cure these varices, I applied (1835) four pins, one through the varicose tumour, another near the internal malleolus, and the other two in the intermediate space. The patient remained eight days in bed. The pins were removed on the eighth day, at which time, obliteration was assured by the firmness and diminution of the saphena, at and below the perforations. These changes became more and more apparent, and four days after the removal of the pins, he began to get up. He left the hospital on the twenty-second day ; the vein was then hard and diminished in size below the superior obliteration ; walking did not produce tumefaction of the limb, the motion communicated to the blood by coughing, stopped at the point where the varicose tumour had been perforated, and this last was firm, and not larger than a hazle-nut.

I saw him again six weeks after his discharge from the hospital ; the varicose veins were hardly evident, the limb scarcely swelled by exercise, and he continued to work during the whole day, which he could not do previous to the operation.

This state lasted six months, when the veins again began to swell, and one year after the operation, he again entered the hospital with an ulcer on the leg. The trunk of the saphena was dilated, and things were in the same state as before, with the exception that the varicose tumour had entirely disappeared, and the motion of the blood caused by coughing stopped at the point which it had occupied.

I ordered the application of caustic potass to the thigh and leg, in the situations which I have already indicated as the most favourable. My orders were not well understood, and three cauteries were applied at one and a half inches distance from each other, the middle one being opposite the knee joint. In consequence of their being placed so near together, the inflammation of each one united, and formed a pelegmon on the inner side of the knee. The internal saphena became firmer, and pressure on it in the lower half of its course along the thigh caused pain. Leeches and poultices were applied, and calmed the inflammation. The phlegmon occupied a space as large as the palm of the hand, and the pus which formed, escaped through the sloughs made by the potass.

This extension of the inflammation, prevented me from again applying the potass, which it is necessary to do, in order to be sure of reaching the vein. I was assured that the vessel was touched in this case, for on the eighth day an ecchymosis of the cellular tissue appeared. The sloughs came away from the seventeenth to the twenty first day. Compression was carefully made from the twelfth day, at which time the sloughs began to loosen. No hemorrhage occurred; the wounds were not healed until seven weeks after the commencement of the treatment. The patient then left the hospital cured of the ulcer for which he had entered; the vein was obliterated in all the parts situated three inches below the cauterizations. All the branches of the saphena in the inferior portion of the leg, were much diminished in size, but they still aided the circulation, as was shown by their softness and the motion of the blood on pressure.

Considerable relief followed this treatment, but it would have been more marked if the pieces of caustic potass had been placed at greater intervals. It is worthy of remark that the obliteration of the saphena, to the extent of four inches, was insufficient to effect a radical cure in varices situated below the obliterated portion, and this proves how necessary it is to repeat these points of obliteration along the course of the varicose veins.

The use of caustic potass endangers hemorrhages; but this may be easily avoided by keeping the patient in bed and making compression around the limb.

In exposing the details of the method, I said that it was necessary to make successive applications of caustic potass in the same spot until a slight discharge of blood announced the opening of the vein; it may happen that hemorrhage occurs, instead of a few drops of blood appearing and simply colouring the bandage, as in the majority of cases.

This hemorrhage which I have observed from the commencement of my using caustic potass, led me to combine this agent with pins; it was quite copious in Case III, and in the following.

Case V.—Frederick Turr, brewer, born in Germany, aged 48, of good constitution and plethoric habit, being obliged to work in moist places, perceived an ulcer forming on his right leg, (1828.) Subsequent to this, varicose veins appeared which increased progressively and kept up different ulcers. He was admitted November 5th, 1838. At this time he had an ulcer eight lines in diameter situated at the union of the inferior and middle thirds of the right leg on the internal surface of the tibia. The edges of this ulcer were hard, inflamed, and the surrounding skin red. The internal saphena vein of the same side, was dilated from the upper part of the thigh to the foot. The motion of the blood in a direction contrary to the natural course was felt throughout its extent; it was not knotted. On a level with the knee there arose a varicose branch which anastomosed with the external saphena; this last vessel was not dilated.

On November 10th, five days after admission, four pieces of caustic potass were applied on the course of the vein; the first on a level with the knee, two others at eight inches above and below the articulation, the fourth on the anastomosing branch.

On November 14th, a new application of potass was made in the same places, at the same time advising the patient to remain in bed. However, two hours after this application he arose, when the vein opened and nearly two pounds of blood were lost. A horizontal position and slight compression arrested the bleeding; the patient revived, and the treatment was not changed. The opening from which the hemorrhage proceeded was situated about eight inches above the knee.

The next day we felt a firm cord between the openings extending above and below, which soon occupied the entire length of the vessel. After the tenth day subsequent to the hemorrhage the patient got up a little every day; the varices did not re-appear.

On December 20th he left the hospital, perfectly cured. The cicatrization of the ulcer required only eight days' treatment.

In the two observations, (Cases III and V,) the hemorrhage was occasioned by the imprudence of the patients, and would have been alarming had they not received immediate assistance.

How long a time does the patient require to be kept in bed in order to avoid all chance of hemorrhage? On this point I dare not fix any precise number of days, for I have been guided more by the state of the veins than by the time elapsed since the second application of the potass.

When the vein is opened, which is known by slight bleeding, the blood soon coagulates above and below the perforation; the vessel becomes hard and percussion does not produce any motion in the blood. After these signs, which show that the vein is obliterated, all danger from hemorrhage is past; four or five days ordinarily suffice for the completion of these phenomena.

In order to aid the effects of repose, a circular bandage should be applied to the limb immediately after the second application of potass. Neglect of this precaution has been followed by hemorrhage in a case now under treatment.

The method to be followed in using caustic potass being known and the consequences of this treatment being proved harmless, it now remains for us to examine the therapeutic results.

The use of caustic potass produces a complete and permanent cure of varicose veins which are limited to the internal saphena and its branches, and which affect persons under 60 *years of age.*

I could cite 14 observations to prove that the cure may be permanent under these circumstances. I shall only give three cases that I have been enabled to follow up for any length of time.

Case VI.—A female, aged 59, of a strong constitution, entered the hospital in March, 1835, to be treated for a large ulcer situated below the right calf. The internal saphena vein of this side was dilated along the thigh; in three points it presented tumours formed by the folds of the dilated veins. One of these tumours was situated at the internal and inferior part of the thigh, another a little above the calf, and a third over the internal malleolus. Three days after the admission of this patient, I applied three pieces of caustic potass, the two superior on the varicose tumours, the third five inches above the malleolus.

At the end of five days a small piece of potass was again applied in the centre of each slough. Eight days afterward, when the sloughs began to separate, a slight bleeding occurred from the ulceration on the calf of the leg. This was easily arrested by compression, which was continued to the end of the fifth week. The sloughs came away about the commencement of the fourth week. The varicose veins did not re-appear, and when the patient was discharged, one month and a half after admission, it was impossible to perceive the least traces of them.

She was again seen 14 months after discharge, at which time the limb did not swell on walking, and no traces of the varicose veins were to be seen. The cure could not be more perfect.

Case VII.—A female, aged 33, afflicted for several years with constitutional syphilis, was admitted in 1835 with syphilitic ulcerations on the legs.

The internal saphena vein was varicose and knotted, particularly at the lower part of the thigh, on the inner side of the internal condyle of the tibia, and at the inferior portion of the calf.

Caustic potass was applied over these three points, and three days afterwards a new application was made in the centre of the sloughs.

Compression was made on the leg from the beginning of treatment. On the 15th day, a very slight hemorrhage occurred from the lower slough, which merely coloured the bandage.

The slough came away between the 14th and 21st days.

This patient has been seen several times during two years and a half following her dismission, and no tendency to a return of the varicose veins has manifested itself.

Case VIII.—Paul Genton, aged 55, soldier, of sanguineous temperament, and good constitution; was admitted October 30th, 1838, with an ulcer one inch in diameter, situated a little above the internal malleolus of the right leg, and large varices of the crural portion of the internal saphena.

In 1813, this patient received a wound on the leg, and pieces of bone came from the opening. A short time afterwards, the veins became varicose, and occasioned several ulcers.

November 13th, two pieces of caustic potass were applied at eight inches distance from each other. November 16th, the caustic was reapplied; very slight bleeding occurred, the patient being kept in bed. Dating from this time the ulcer was cicatrized in eight days. The patient left the hospital about December 1st; I have seen him twice since, once six weeks, and the second time three months after his discharge; exercise did not occasion tumefaction of the veins, and he could devote himseif to labour without experiencing fatigue.

These observations show how long the cure of varicose veins may continue, when they are treated with caustic potass. They leave no doubt as to the superiority of cauterization over pins, in producing permanent obliteration of the veins. This permanent obliteration would be the necessary consequence of the use of caustic potass, if this agent destroyed the entire thickness of the vein, for it is eviden that the circulation could not be rëestablished through the fibrous tissues formed by the cicatrization of the ulcers succeeding the sloughs. But as the caustic potass may only destroy the superficial wall of the vein, and as the appearance of a little blood only proves the opening of this superior portion, we can conceive that the circulation may not be interrupted in a vein having one of its sides entire.

In one case, I have observed this want of obstruction; but in all others, the cure has been perfect, as in those just cited, and in several which will be presently mentioned.

The cure of varicose veins should not be attempted by caustic potass, or any other means, when both the internal and external saphena are dilated.

In the only two cases of dilatation in both veins on which caustic potass was used, I observed that while obliteration was going on in the internal saphena, the external increased in size, and varicose veins which were previously scarcely perceptible became larger, as it were substituting a new disease for the one then in progress of cure.

The extension of the disease to the two principal veins of the inferior extremities, is not the only cause preventing success in the treatment by caustic potass. I will add the following unfavourable conditions; 1st, advanced age of the patient; 2d, thickening of the coats of the veins; this was noticed in Case X.

The treatment of varicose veins by caustic potass, hastens the cicatrization of coexisting ulcers.

This influence has been noticed by several authors. The following cases will show how much activity was communicated to cicatrization of these ulcers by this treatment.

Case IX. — François Plesse, labourer, aged 49, of a good constitution, and sanguineous temperament, was admitted October 25th, 1838, having an ulcer on the right leg, and large varices of this limb. In 1828, he received a blow near the ancle joint of the right leg, producing an ulcer which was six months in healing.

Subsequent to this injury, varicose veins appeared, and progressively increased, until they had acquired a great size. When he entered the hospital, his ulcer was seven inches long, by three in breadth, situated near the malleoli, extending transversely from the inner edge of the fibula, to the posterior edge of the tibia. Several bleedings had occurred forty days before his admission. The internal saphena was cicatrized; it presented a great number of folds from the middle of the thigh, to the bottom of the leg; a large bundle of these, was situated near the knee.

October 26th. Three pieces of caustic potassa were applied; the first at the middle of the thigh, the second at three inches distance above the knee, and the third on the coil of veins situated near the articulation.

Between October 26th and November 10th, three new applications were made in the same places.

No symptom of local, or general irritation appeared; his diet was not changed. This patient remaining in bed, no copious bleeding occurred; only after the second application, a little blood issued from the eschars. The ulcer was dressed with emollient poultices in the commencement, and of compresses wet in *vin aromatique*, when the inflammation had subsided. Cicatrization of the ulcer commenced on the sixth day, and extended so rapidly, that it was complete on the twenty-third day of treatment.

The coagulation of the blood in the varicose veins began the day after the second application of the potassa; and when the patient was discharged on November 30th, the vein was scarcely perceptible: walking did not cause the reappearance of its dilatations.

Case X. — Gabriel Guillaud, aged 50, soldier, of a good constitution, was admitted December 1st, 1838.

This patient attributed his varicose veins to forced marches; they were of fifteen years' standing. For the past ten years, he has unsuccessfully treated several varicose ulcers of the legs. On admission, he had an ulcer eight inches long, a little above the ancle joint of the right leg, occupying the internal half of the limb. Its surface was covered with putrescent matter, and exhaled a gangrenous odour. Copious hemorrhage had occurred several times during the eight days prior to his admission, from the ulcerated veins which ramify at the bottom of the ulcer, and had left him in a feeble state. The internal saphena veins of both limbs were varicose in their crural portions. The internal saphena of the left side, was much dilated and presented an example of venous aneurism, about six inches below the knee. The motion of the blood was manifest in both limbs; but at the inferior part of the leg, and on the foot of the left side, it was difficult to empty the vein by compression, which proved considerable thickening of its coats.

Two applications of potass were made, and renewed in each leg. The ulcer on the right leg was entirely healed at the end of a month, and the varicose veins had entirely disappeared.

The treatment of the varices on the left leg, presented the following peculiarity: after the second application of the potassa, I felt a hard cord along the course of the vessel; the motion of the blood was no longer perceptible. I did nothing more, but on the twelfth day, I noticed that the motion of the blood was evident in the lower part of the leg. I reapplied the potass in the same places; the same symptoms of cure occurred, not any more satisfactory than the first. This patient left the hospital retaining the dilatation of the left internal saphena vein in its inferior portion, particularly on the back of the foot, although the trunk of this vessel had been obliterated in all the spots where the caustic potassa was applied. This insuccess was attributed to the long standing of the disease, and to the thickening, and want of elasticity of the venous coats.

Case XI.—Jacques Doyon, aged 52, was admitted November 26, 1838, having an ulcer occupying the whole circumference of the lower part of the left leg, being about six inches in length. Its edges were callous and its surface irregular. Above the ulcer were many varicose veins which followed the course of the internal saphena. A very sensible fluctuation was transmitted from the veins of the thigh to those of the leg. The external saphena vein was not varicose. The formation of the varices was ulterior to the appearance of the ulcer; this originated twenty-two years before his admission, in consequence of a blow on the leg.

During the first two weeks following the admission of this patient, the ulcer was simply dressed with wine compresses, without much amelioration.

On the 15th day, three pieces of caustic potass were applied; two on the leg and one on the thigh; the ulcer was dressed with adhesive straps.

18th day. Reapplication of the caustic potass in the same places as before, after incising the slough. On the next day slight hemorrhage occurred, which was arrested by compression.

25th day. Firm, hard cords along the vein, between the cauteries: the patient is kept in absolute repose.

30th day. The cord extends along the vein from the ulcer to the upper part of the thigh. The improvement in the ulcer goes on with rapidity.

35th day. The ulcer is diminished two-thirds. The patient is allowed to walk about, and the varices do not reappear.

From this time the patient continued improving. The cord which we noticed, remained only one month, after which the coagulum was absorbed. Nevertheless the vein remained obliterated, and fluctuation has not reappeared.

February 26, 1839. It is now more than six weeks since the veins were obliterated; the patient walks all day, and yet the varices do not reappear. He remains in the hospital on account of his ulcer, which is not entirely healed.

March 6th. The ulcer is only two lines long and four broad.

The conclusion which I wish to draw from these facts, in reference to the rapidity with which ulcers heal when the varicose veins are treated by caustic potass, can only be logical so far as I prove that without this treatment the cure would have been slower. This proof is shown in a certain degree by the stationary condition of the ulceration in case xi, and by the rapidity of its cicatrization shortly after the commencement of the treatment of the varicose veins.

The proof is not so easily given in the first two cases, in which we have no means of comparison, but the impression they made on me was too striking to be deceitful.

This rapidity with which these ulcers cicatrize depends on the powerful revulsion caused by the multiplied and deep ulceration produced by the caustic potassa, and on the cure of the varicose veins.

SECTION IV. — IN WHAT CASES OUGHT WE ATTEMPT THE CURE OF VARICOSE VEINS.

Setting out with this truth, which is I think now placed beyond doubt, that the use of caustic potass, under suitable precautions, produces a perfect, durable, and safe cure of varicose veins, I inquire in what cases ought we try to obtain it.

1st. This attempt is indicated whenever the varicose veins ulcerate and produce hemorrhage. In these cases, which are very rare, for we must distinguish the ulcers around which varicose veins ramify, from those where these veins ulcerate and bleed; in these cases I say we must necessarily act, and the necessity is strong enough to warrant us in attempting the cure of varicose veins, even when affecting persons advanced in years, and when both the internal and external saphena veins are dilated.

2d. This treatment is also indicated when the varicose veins exist with ulcers which require a repose of six weeks or two months or more. Confinement in bed, which is one of the inconveniences of this method of treatment, is of no consequence, since the ulcers would alone require it.

Setting aside these complicated cases, it seems to me that we ought to be contented with diminishing the swelling produced in varicose veins by walking and labour, by using a laced stocking. If no ulcerations exist, or if these are not extensive, it is useless to confine the patient in bed for a month; — this being the time necessary for the separation of the eschars produced by the successive applications of caustic potass, and for the cure of the ulcerations following this separation; the remedy in these cases would be worse than the disease.

Time doubtlessly will confirm the propositions which I have expressed in this memoir, after an attentive and prolonged examination of the question. Cauterization will again take that importance in the treatment of varicose veins of which it has been deprived by other methods more elegant, more ingenious, it is true, but dangerous in their immediate consequences and uncertain in their curative effects.

REVIEWS

AND

BIBLIOGRAPHIC NOTICES.

Medical and Physiological Commentaries. By Martyn Paine, M. D. A. M. 2 vols. 8vo. pp. 1531. Collins, Keese & Co. New-York, and John Churchill, London.

(*Continued from p.* 172.)

In resuming our review of Dr. Paine's Commentaries, (which we may observe has passed unavoidably into new hands,) we find ourselves compelled to limit our remarks to such portions of the second volume as appear to us most interesting, both from the character of the subjects discussed, and the fulness with which they are illustrated. The more we examine the work, the more are we astonished at the immense research it displays, the more we are pleased with the general fairness and candour of its statements. To this latter expression, however, we are compelled to state that there are some striking exceptions; a mistake into which Dr. Paine has unintentionally, no doubt, been led by his enthusiastic attachment to what he believes the true principles of medical philosophy. None among his warmest admirers are more convinced than ourselves of his ardent love of truth, or of his devotion to the improvement of medical science: the work before us is a stupendous proof of much more even than this, to those who read it with the attention it deserves.

THE PHILOSOPHY OF VENOUS CONGESTION.

The essay embracing the consideration of this subject is by far the most voluminous in the whole work, occupying more than 400 pages. It is that, too, on which, as it appears to us, Dr. Paine has bestowed his greatest strength, if indeed one portion of his work can claim a decided merit in this respect. Its object is to prove that the phenomena of venous congestion are essentially *vital* in their character, and not dependent at all upon the various mechanical or physical causes, as obstruction, relaxation, &c. that have been assumed by different writers to explain their production, being dependent, in fact, upon *an inflammation of the veins of the part affected.*

And here we may remark at the very onset, but after a careful examination of what Dr. Paine has written upon the subject; after a study of his arguments derived from analogy, from the symptoms, the causes, and many other legitimate sources of knowledge calculated to illustrate his position, we are still compelled to confess that we are not convinced. We would by no means assert that our author is wrong in his conclusions; it is possible, some will think probable, that he is right, but we have not reached that point, conviction — on which the mind rests secure and fixed amid conflicting opinions. Indeed, we see distinctly the great cause of our difficulty. To be convinced that inflammation is the cause of venous congestion, we want something more than analogy, and symptoms, and the like; we want a minute and thorough examination of the *morbid anatomy* of the part affected — and this we do not obtain. We are satisfied that a few good dissections by which the acknowledged consequences of inflammatory action in the veins might have been clearly displayed if existing, would have have done more toward convincing a large class of readers of the truth of Dr. P.'s views, than all that his learning, and ingenuity, and talent have enabled him to offer. Dr. P., as numerous portions of his writings prove, undervalues the science of morbid anatomy, and yet he cannot convince his medical readers without its aid; a corner stone is wanting at the very foundation of the undertaking.*

We find no occasion to occupy the attention of our readers with the arguments adduced by Dr. Paine in refutation of the theories in relation to venous congestion. His arguments on these points are clear and decisive, and well worthy an attentive perusal: it is sufficient to state that he has laid open the whole ground for new investigation, which he attempts to cover by his own theory, that of inflammatory action in the veins.

Our author's first general argument is drawn from the *effect of remedies* in venous congestion.

> "The present theories of venous congestion render it impossible to understand how the removal of a few ounces of blood should speedily effect the contraction of a large extent of veins that are supposed to be mechanically obstructed, or to exist in a state of great passive dilatation. The wonder is that such a remedy should have been devised to give tone to debilitated vessels. In common inflammations, the capillaries may be relieved by reducing the force

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* We do not mean to state, that Dr. P. has neglected entirely the morbid anatomy of the veins in congestion. We shall see directly that he has devoted a section to it; but only that his observations are inconclusive.

of the vis a tergo; and this, we apprehend, is the only intelligible ground for the doctrine of stagnation. But, it is manifest that no such principle can operate in the large veins when the seat of congestion. Here the force of the circulation may be depressed by the disease, whilst relief will follow its exaltation by bloodletting.

"If, however, we suppose the pathological cause of the dilatation of the vein to consist in a low state of inflammatory action in the venous coats, or only approximating that mode of disease, we want only the common analogies supplied by the ordinary phenomena of bloodletting in the latter affection to appreciate the manner in which the contraction is affected. So obvious is the control of that remedy over congestions, that many intelligent observers, who adopt the mechanical construction, institute a parallel between its results in this affection and in inflammation. * * * * In inflammation, however, the principal contraction affects only the capillary vessels, and those alone are the immediate instruments of disease. But it is otherwise in venous congestion. Although the capillary veins are probably involved in the morbid process, their larger trunks are most obviously the seat of disease and plethora. Analogy, therefore, is opposed to the supposition that the influences of bloodletting operate in the same way in producing their contraction as in the capillary arteries. And since the latter do not appear to contract so much from the diminished volume of blood, as from their vital actions, so must we believe that the contraction of congested veins can only be established by removing some cause from their parietes which will enable them to obey their natural law. In venous congestion, too, not only the capillary arteries, universally, but in a lesser degree, their large trunks, are often in a state of morbid contraction. Bloodletting removes that contraction; and although there is thus actually determined upon the congested veins a greater quantity of blood, there is a simultaneous diminution of their volume. The whole venous system, with the exception of the congested portion, and that about the right cavities of the heart, is, also, in numerous cases, in a state of contraction. Its dilatation, from bloodletting, is partially the result of the greater volume of blood determined upon it; and in this respect the congested veins can enjoy no exemption. We thus see presented the remarkable phenomenon of one, and the principal, portion of the veins undergoing a dilatation, whilst the morbid portion suffers contraction, from the common influence of the same agent."

"Will it be still said that the rising force of the circulation overcomes the congested state of the veins? If congestion depend on their relaxation, and they be distended beyond their power of contraction, how is the increased volume of blood determined upon them, and with an augmented force, to remove such condition?"

We have selected the foregoing extract as illustrating Dr. Paine's views of the nature of venous congestion, and his mode of reasoning upon an important, and with him favourite subject. He then goes on with his inquiry, by asking, 'how is the heart roused into action by bloodletting?' This he contends is mainly a sympathetic consequence; for the direct impression is upon the arterial and venous capillaries. The contraction of the capillaries being removed, the blood is sent in greater quantity to the left cavities of the heart, which is thus stimulated to increased action.

We should do injustice to Dr. Paine, remembering how much bloodletting is his favourite remedy, did we omit to state that, even in venous congestion, he can see cases in which bloodletting is not only improper but injurious, and where a contrary, or stimulating course of treatment is indicated.

> "This is especially seen in complex and specific affections, as scarlet fever, measles, congestive typhus, &c., constituting cases in which the vital forces must be sometimes increased, or the power to bear the loss of blood must be produced by cautious stimulation."

Dr. P. concludes his argument from the effects of remedies in venous congestion, by alluding to the known efficacy of blisters and mercurials in this affection, but offers nothing of particular interest in relation to their modus operandi, except to suggest that they operate by removing some morbid condition of the veins on which their dilatation depends, and that this condition is probably of an inflammatory nature.

Our author devotes but little space to the consideration of the *causes* of venous congestion, as tending to prove its inflammatory nature, and we think with great propriety. For of all important questions in medical philosophy none are more obscure than those which relate to the causes of disease. Dr. P.'s object is to show that inflammation and congestion frequently exist at the same time, and that the apparent causes which produce or favour the developement of the one, lead also to the production of the other.

But we pass from this comparatively uninteresting subject to the study of inductions from the *symptoms*. Every reader will understand the importance of this portion of the subject.

Dr. Paine's principal object in this portion of his essay is to show that the symptoms of venous congestion and those of inflammation sufficiently resemble each other to aid in establishing the conclusion, that they are intimately connected in their nature. We do not suppose for a moment that Dr. P. means to infer, or to state, that inflammation and congestion are the same things, but simply this — that if inflammation is indicated by certain well marked symptoms which exist also in cases of congestion, that, therefore, they must be in some way intimately connected; this connection Dr. P. supposes to reside in the fact, that the veins themselves are the seat of inflammation in the latter case.

We object to Dr. P.'s argument drawn from the phenomena of congestion as exhibited in the course of fever. For fever is an idiopathic disease, with symptoms of its own independent of either congestion or inflammation, symptoms indeed often so closely allied to those indicating the above conditions, as to render the diagnosis impossible; yet after death the organ affected is frequently found without the least indication of either structural change. Facts like these attest the value of morbid anatomy, if rightly considered, inasmuch as they prove what is *not* the cause of symptoms, if they throw no light on their real nature. The cases by which to test the connection between inflammation and congestion are evidently those in which these conditions exist simply and uncombined in different subjects. We doubt very much if this method of examination would establish any very close resemblance between the symptoms of the organic changes in question.

Dr. Paine refers particularly to the brain as a proof of his position.

> "It is in venous congestions of the brain that most unequivocal phenomena are presented. Here we generally meet with the vital signs of inflammation, though often more subdued, whilst morbid anatomy may disclose only a turgescence of the veins."

He might with equal propriety have added, we not unfrequently meet with the vital signs of inflammation while morbid anatomy discloses *nothing at all* in the form of organic lesion. He might have added still more striking illustrations from facts which prove, that symptoms of the most inveterate organic disease have existed for a long period during life, while dissection has still continued unable to reveal the slightest appreciable lesion. The truth is, the diseases of the brain are still a mystery, a misfortune not to be charged to morbid anatomy, but, in part at least, to physiology which has as yet failed to afford us the rationale of its healthy action. It is, therefore, not without surprise that we find Dr. Paine introducing this organ at all to decide the question now under consideration.

> "Among the direct evidences of inflammatory action in simple venous congestions is the frequent buffing and cupping of the blood, and this too when the action of the heart may be preternaturally slow, or the circulation prostrated."

Our author remarks that this statement is denied by Dr. Armstrong, a leading authority in his opinion on the subject of venous congestion. But in either case, this symptom must be regarded as of inferior value for more reasons than one. In the first place, we all know how much the buffy coat of the blood depends upon the manner in which the blood is drawn; this Dr. P. himself has sufficiently explained. Then, admitting that the buffy coat is an evidence of inflammation, which is the best attested general fact in relation to it, it is quite as certain that it occurs in cases where nothing approaching to inflammation exists—venous congestion may be one of these cases; pregnancy is certainly one. And so it is with the pulse, another symptom, and one of those the most relied on by practitioners in the diagnosis of internal inflammation; yet how often has it proved a treacherous guide. Indeed nothing is more clear to our minds than the great truth so fully illustrated in the writings of Marshall Hall, that symptoms hardly to be distinguished from each other may depend upon precisely opposite conditions of the system. Our author somewhere in his writings laughs at this idea, and says, rather unadvisedly we think, considering the position of its expounder, this may do very well for France, but the practitioners of England and America know better. We doubt very much whether they do. At all events, unless we are much mistaken, some of our most distinguished practitioners entertain the same belief.

The seventh section of the Essay before us is devoted to the *morbid anatomy of the veins.* We had travelled thus far with Dr. Paine rather in favour than otherwise with his theory; for although we had not touched upon any conclusive proofs, we at least had met with many arguments that were plausible and judicious, and as we had, besides, no prejudices of our own for any other theory to shut out conviction, we hoped now to be convinced. We expected a fair proportion of well marked cases and dissections in which the symptoms of congestion should be found connected with the post-mortem evidences of inflammation of the veins, so that all doubt might vanish in full conviction. But this has not been the result of our studies. There is not, so far as we can ascertain, a single well attested post-mortem fact which proves for a single case, that inflammation of the veins under any form has anything to do with the phenomena of venous congestion.

But let us quote Dr. Paine himself.

> "It is not our intention, at present, to advance any theory as to the intrinsic nature of inflammation, our principal object being to ascertain the pathological cause of venous congestion, and to place its treatment on rational ground. We shall go on to consider only what is admitted or proved, and aim at conclusions from acknowledged data. We may say, also, that the various facts which we shall bring from other authors were not originally intended to bear upon our subject. They are, therefore, the more entitled to confidence, as supplying the force of 'internal evidence.' For this reason, too, we shall say but little of our own experience." * * *
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> "In beginning, then, our consideration of morbid anatomy in its various relations to venous congestion, we may premise that the vital phenomena and the effects of remedies, with the aid of analogies, are generally a better ground of

induction, in an abstract sense, than the ultimate results of disease, which are liable to so many modifications from adventitious causes."

We would simply call the attention of our readers in this place to the last paragraph we have quoted from Dr. Paine, as it expresses in a few words, his idea of the true and only mode of investigating disease. We shall attempt to discuss the subject more fully hereafter; we will therefore only add at present, that the Essay we are now studying is a full illustration of its practical value; let those who are convinced adopt it as their system of study. We now pass to an examination of what Dr. Paine has written on the morbid anatomy of the veins as tending to confirm his theory of venous congestion.

Our author first quotes from Dr. Armstrong a general account of the morbid appearances in congestive fevers.

> "1st. An over-accumulation of venous and arterial blood in the part, the functions of which had been disturbed during life: and *especially in the veins*. 2nd. An effusion of a serous or of a mucous fluid, according to the structure of the part. 3d. Sometimes an effusion of blood."

The two latter appearances Dr. P. holds to be important evidences of the vital and inflammatory nature of venous congestion. We have only time to notice one fact, which certainly may be objected to this view of venous congestion and its consequences. In organic affections of the heart we have venous congestions in different parts and consequent effusion of serum and even of blood in certain cases; are these cases to be regarded as inflammatory? we know of no facts that render this in the least probable. Dr. Paine in a further consideration of this subject, earnestly recommends to the attention of morbid anatomists and those who believe that effusions of serum sometimes depend upon inflammation, and sometimes on an "opposite condition," and sometimes on a mere process of filtration, the following fact taken from Dr. Armstrong: "When the effusion is extensive, the *other signs* of congestion are less obvious, as is the case in *inflammation* when effusion occurs." The philosophy, Dr. P. thinks, must be the same in both cases, and cannot be explained on mechanical principles; the effusion acting on the veins in congestion, as the effusion which takes place from inflammation does upon the arteries. For ourselves, however, we can see no great difficulty in admitting that effusion both of serum and blood may occur in many cases of venous congestion without being at all connected with anything like inflammatory action. But these are points hardly susceptible of proof; we therefore pass on.

"Having bestowed some attention upon the state of the venous tissue in morbid congestions of the veins, we shall venture to state very briefly the result of our observations."

"Whether this affection have existed in a simple state, or complicated with idiopathic fever, we have remarked, in several instances, that the vessels, particularly of the external coat of the veins, have appeared manifestly increased in number and size. We have also observed the important fact, that the coats are not attenuated; but, on the contrary, in instances of protracted congestion, we have found them palpably thickened. This was especially the case when congestion had been connected with tumours, and analogous developements that may form in the parenchyma of organs, and where pressure could not be supposed to operate. At other times, when the disease has been more rapid, we have discovered a softening of the inner coat. This phenomenon we have especially observed in some congestive fevers and in the cholera asphyxia."

The above paragraph we hold to contain more conclusive evidence of the truth of Dr. Paine's theory as to the inflammatory condition of the veins in venous congestion, than any other portion of his work. It is an appeal to the true source, at all events, and if it is not a convincing one, it has at least the merit of being well directed. Recollecting that it is an argument addressed simply to the morbid anatomist, we do not hesitate to ask him if he can recognise in this brief summary of Dr. Paine's observations, the consequences of inflammatory action? We think he will answer, No. But let us examine the different points of the case a little in detail. In the first place, Dr. P. states that the vasa vasorum, particularly those of the external coat, are sometimes manifestly increased in size. This, by itself, is no evidence of inflammation, as all the best pathologists of the day admit. Again, in instances of protracted congestion, the coats were not attenuated, but palpably thickened; this was especially the case where congestion had been connected with tumours. Now we see still less evidence of inflammatory action in this than in the former change. For it is an established law in pathology, that when the hollow organs become distended from any cause, their coats commonly become comparatively thickened; witness the bladder in cases of stricture, the stomach, the heart, &c. under similar circumstances. Finally, in certain cases more rapid in their progress, the inner coat of the veins was found softened. This condition, like the increased vascularity first mentioned, cannot, by itself, be regarded as a consequence of inflammation; witness the analogous cases of softening of the brain and of the mucous membranes. So that, after all, we think we have good reasons for contending that Dr. Paine's proof, drawn from the post mortem inspection of the veins, is thus far inconclusive. We must recollect that he has a new theory to sustain, and for this very reason the proof required is of the strongest kind — a probability will hardly satisfy Dr. Paine, and even admitting this, we conceive is treating his theory with great indulgence. And here we would not be misunderstood. We are not contending that the facts adduced prove the non-inflammatory nature of venous congestion, but only that they do not prove its existence. Here morbid anatomy comes in for its share of censure, if indeed any censure is just, in not proving what the study of other indications have rendered probable. Yet such is the fact in numerous instances. The vital phenomena, the operation of causes, the effect of remedies during life, indicate the probable existence of certain pathological changes, and yet after death we do not find them. Are we therefore to deny their existence? Certainly not. But are we to believe that they existed? With equal certainty, not. We must remain in doubt, until we obtain new light, which perhaps may never visit us. The conscientious observer must indeed feel sometimes heavily oppressed by the vast mass of uncertainties that weigh upon him; still let him cherish what is fully proved, let him hope for increasing knowledge; but let him guard, above all, against the danger of forming rapid conclusions from uncertain and imperfect data.

Dr. Paine, indeed, does not appear to be entirely unconscious of the imperfection of his pathological facts in supporting his theory of venous congestion. For after quoting the opinions of different authors, and the facts related by them, none of which are conclusive of the point in question, and after repeating, by way of preparation, his often asserted opinion, — the superiority of the vital signs in marking the true pathology of disease, — he comes to a new argument, which we are willing to receive just as he places it before us. Our author contends that absence of vascularity is no argument against the previous existence of inflammation, especially in certain tissues, as the serous membranes, which is certainly true; and that, therefore, the absence of vascularity in an inflamed tissue, so analogous to a serous tissue as that lining the veins, ought not to excite our surprise: certainly not. Indeed, he goes on to state, on the authority of Cruveilhier, that in certain cases of true phlebitis, this want of vascularity has been observed. But would Cruveilhier, or any other pathologist who wished to convince his readers of the truth of his opinion, dare call such a case phlebitis, without some of the recognised consequences of inflammation, as effusion of lymph or pus, were found? We are ready to admit that a tissue may have been inflamed during life, and still present no appearance of increased vascularity after death, but *to know* that this condition existed, we must have other and even more conclusive signs.

Section VIII is devoted to the organization of the veins. We shall pass by this, and come to "*The analogies supplied by varix and hypertrophy of the veins.*"

> "Having thus seen that the veins are remarkably organized, that they are highly endowed with the 'tonic forces,' that they are peculiarly susceptible of diffuse inflammation, and to its propagation by remote sympathy, we will now examine some common affections which are allied to venous congestion, and where various gradations of inflammation are found to exist. To this will succeed the consideration of active phlebitis. * * * We begin by considering the pathology of varix and hypertrophy of the veins."

Dr. Paine, after quoting the opinions of several distinguished surgeons, as to the causes of varix, some of whom refer it to mechanical causes, as obstruction, others to debility of the coats of the veins, &c., asks whether causes which excite irritation in veins predisposed to sub-acute inflammation, may not be the exciting causes of varix. That pressure and obstruction is not sufficient to produce varix, is evident to him from the fact, that the dilatation of the small veins, when their principal trunk is obliterated, does not lead to this morbid result. Indeed, our author goes on to state a large number of facts which seem to us to prove conclusively that varix is not the result of mere mechanical causes, whereas a great proportion are consequent upon injuries, or arise during some inflammation of the skin, or in connection with some constitutional irritation. He then quotes the morbid appearance, found in varicose veins, from M. Sanson. The veins are thickened and become converted into hard, tense cords, and finally they become knotty and flexuous. The cellular tissue investing them becomes, also, gorged and indurated. These changes Dr. P. refers to inflammation; but we think without good reason; at all events the fact is not proved, at least for the primary change, and many of the best pathologists maintain an opposite opinion. Indeed, the remarkable case of varicose veins of the pia mater, taken from M. Andral, to which our author attaches so much weight, is by no means proved to be dependent on inflammation, neither does this distinguished pathologist, who is certainly disposed to see inflammation as often as it exists, appear to regard it in this light. Take his own statement: "The dilatation of the veins of the pia mater, and the softening of their walls, were certainly the effects of *chronic disease.* But this is not necessarily chronic inflammation."

Dr. Paine further attempts to strengthen his position by referring to the local symptoms of varix.

> "That the pain and soreness are owing to inflammation is inferrible from all analogy, when associated with the other signs, and from the multiplied instances

in which simple distension of vessels is not productive of suffering, whether the distension be suddenly produced, or in a gradual manner; whilst they denote the intensity of the vital forces with which the veins are endowed."

Finally, Dr. Paine draws an argument in favour of his view of the inflammatory nature of varix from the fact that varicose veins are liable to spontaneous obliteration and other changes which distinguish active phlebitis. He controverts by some very able arguments the opinion of Hodgson and others, that the coagula form in the veins from a stagnation of the blood; also the opinion of Hunter, that these coagula possess an independent vitality. These are very interesting questions, but our limits admonish us that it is time to hurry forward more rapidly. We would only ask, how can we explain the organization of the contents of aneurismal sacs, and their gradual change into tumours resembling fibrous tumours, in any other way than by supposing, that the coagulum first deposited from simple stagnation of the blood, finally becomes organized and altered in its properties — and if so in the arteries, why not in the veins?

The pathology of *venous hypertrophy* is appealed to by Dr. Paine in support of his theory of venous congestion. The arguments he uses sre analogous to those introduced in relation to varix, to which this affection is closely allied, if indeed it should not be classed with it. We think, however, that if varix cannot be satisfactorily proved to be dependent on inflammation, that hypertrophy is still less likely to become so. Here, as in the former instance, we must distinguish between primary and secondary effects, and not allow ourselves to fall into the error of which Dr. Paine so loudly complains; yet we think without reason, that the morbid anatomists judge of the nature of disease simply by what they discover after death. But our author by no means confines himself to the study of the morbid anatomy of hypertrophy; he inquires into the causes of this affection, and thinks that such as produce it tend strongly to support his views. He concludes the examination of this portion of his subject by an inquiry into the pathological condition of the veins in cancerous and other malignant diseases, maintaining that obstruction will not explain the dilatation. This portion of Dr. P.'s Essay is to us extremely interesting, and particularly well worthy an attentive study, both for the numerous facts it contains and the clear manner in which they are illustrated. If our own short notice shall have left an imperfect idea of his opinions in the mind of the reader, he will find much of them embraced in the following:

"If, then, it appear that inflammation exists in varix, hypertrophy, the venous enlargements which attend carcinomatous affections, &c. in the absence of other apparent causes of dilatation of the veins, we must conclude that it depends upon that state of disease. This will form a strong ground of analogy in our farther inquiry into the analogous phenomenon of venous congestions. We shall have farther proof, also, that different orders of veins are endowed with different kinds and degrees of susceptibility to inflammation. That the disease is variously modified according to the natural modifications of the vital properties of the different series, and according to the nature of the remote causes, and the species of inflammation, or other disease, which may affect other tissues with which the morbid veins are connected. That the superficial veins are mainly the seat of varix and hypertrophy; the deeper seated, but such as belong to parts that are not concerned in organic life, are most liable to phlebitis: whilst those of the great vital organs are alone especially disposed to congestion. From their varied situations and their particular relations to other parts, the different series of veins are not only distinguished by peculiar modifications of the vital powers, but are exposed to the agency of causes specifically different; those of the surface more to the causes of common inflammation, and those of the parenchymatous organs, as in congestion, to such specific ones as derange the viscera with which they are connected."

We now pass to the examination of the analogical argument drawn from the phenomena of acute phlebitis in support of our author's theory. Here we have an unquestionable inflammation as the primary cause, a fact it may well be remarked in passing, not established by the study of the vital phenomena, or the causes, or even the effect of remedies, but by the simple aid of morbid anatomy. We think this decidedly the most conclusive of Dr. P.'s arguments derived from analogy. Still we maintain, in contradiction to Dr. Paine, the truth of the remark of M. Louis, "*That analogy is only useful to point out fresh subjects for investigation, to lead us to the discovery of facts.*" To apply this view to the case before us; let it be *proved*, even to the satisfaction of the morbid anatomists, that the dilatation of the veins in phlebitis, in varix, and in hypertrophy, is owing to inflammation, the only real advantage; at all events, the great advantage of such a conclusion in relation to venous congestion would be to lead us to inquire, to examine and see, if this affection, similar in appearance, can be referred to the same cause. Dissections have proved the inflammation of the veins in phlegmasia dolens, they have thrown light on the nature of varix and hypertrophy, but have not yet perhaps established their real nature. Equally obscure to our minds is the true pathology of venous congestion, yet the path is clear, and for this we are indebted to Dr. Paine. His investigations have thrown great doubt on prëexisting theories; they have called forth a new view of the whole question; the truth of which is not to be tested by empty speculations, but by careful examination and patient thought.

In phlebitis, according to our author, there is generally an absence of the capillary injection of the internal coats of the veins. There is generally the same dilatation of the vessels as in venous congestion, especially when the inflammation is least violent. The superficial veins become enlarged and varicose, presenting the appearances noticed in ordinary cases of congestion. This enlargement of the superficial veins has been, and is now we believe, commonly supposed to be caused by the obstruction of the deeper seated veins from inflammation. Dr. Paine, however, denies this entirely, and asks:

> "Is not an extension of a low degree of inflammation from the deep seated veins the cause of the enlargement of the superficial?"

Let us notice his arguments on this point. Speaking of Dr. Davis, who is inclined to the common theory on this subject, he remarks:

> "But, since 'he is unacquainted with a single case among a great number which have been recorded since the time of Puzos, where the establishment of the circuitous circulation has been prevented by general bleeding alone;' and since the disease is often too soon overcome to admit the supposition that any obstruction had taken place in the femoral vein, nor can any rational explanation be given of the operation of the curative means upon the hypothesis of obstruction; and, more especially, as later experience has shown that obstructions, when they occur, do not take place till the enlargement of the superficial veins has supervened; and since, also, venous congestion supplies analogies by which we may interpret the dilatations of the superficial veins in active phlebitis upon vital principles; and unless too, the supposed obstructed vein be among the largest, the blood will be so distributed through the collateral and anastomosing vessels that the consequent dilatations can be scarcely appreciable, we must seek for the cause of the enlargement of the superficial veins in the propagation of a lower degree of inflammation from the deeper seated, whose dilatation, or subsequent contraction, depends on a higher degree. This solution of the phenomenon is shown to be correct by numerous cases."

Dr. Paine then adduces several cases, some of which go far to prove that the enlargement of the cutaneous veins in phlegmasia dolens, is dependent on inflammation of these veins.

We are here obliged to leave the subject of venous congestion. A large portion of the essay before us still remains unnoticed. Yet we would fain believe that enough has been placed before our readers, to convey to them a clear idea of the principles it maintains, and of the arguments and illustrations with which it abounds. We have been far more anxious that Dr. Paine's views should be fully stated, rather than that any objections of our own should occupy their place. Still we must refer the student to the work itself. An undertaking which embraces so much, which abounds in such variety of criticism and illustration, is of all others the most difficult to serve up, at second hand. The reader may not be convinced on every point, but he will not fail to be instructed. Indeed, we very much doubt whether the thoughtful student is often fully convinced of important truths in practical medicine by the reading of even the best books. The experience of the most accurate observer is still to be tested, the arguments of the most profound reasoner, are to be pondered and examined again and again, as we gain new facts. Medicine as a science is not only progressive, but has as yet attained to but little of that elevation on which it can stand secure and fixed.

COMPARATIVE MERITS OF THE HIPPOCRATIC AND ANATOMICAL SCHOOLS.

THE WRITINGS OF LOUIS.

Dr. Paine concludes his Commentaries by a review of the writings of M. Louis. This essay is so intimately connected with the preceding, a comparison of the hippocratic and anatomical schools, that we shall examine them together.

The chapters before us, embrace two great questions ; the consideration of *the importance of morbid anatomy* in the science of medicine : *the value of the numerical method* as a means of improving our medical knowledge.

It will soon be discovered by those who read Dr. Paine, that a disposition to undervalue the present pretensions of morbid anatomy pervades every portion of his work ; he evidently regards it as of quite secondary importance in the study of disease. But before offering any opinion of our own upon the subject, we prefer that our author should speak for himself.

> "The legitimate object of morbid anatomy, is to expound the sensible changes which may take place in the instruments of morbid action, the secreted products, and the lesions of structure which may supervene upon disease. These it associates with what had been determined by the vital signs, as to the essential physiological changes ; and when doubtful cases may arise, from the absence of vital signs, should the physical results occur that have been found to have been the sequelæ of certain pathological states, it is then that morbid anatomy reflects its posthumous light with various degrees of importance. In relation to specific cases, it is of little or no practical moment ; for where the same obscurity occurs, there must be the same deference to the cadaverous results." * * *
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> [The physical results, the products of disease,] "stand as the ultimate indices that a certain mode of action had existed, of which the vital signs had been the attendants, and which had formed the sole ground of that pathological induction, which, after a series of observations, the physical products illus-

trate, and are merely taken as an indication that those signs, the basis of the pathology, had been present. Or, if absent, or neglected, the products being known to be a general result where those signs had existed, they show us, too late it is true, that an important disease had been either concealed or overlooked. Farther than this, in a specific sense, morbid anatomy contributes no light. But is it even permitted to yield this light?" * * *

"In a general sense, therefore, morbid anatomy comes in at the closing scene to demonstrate the nature of the physical changes, or to illustrate the extent of our cöoperation with nature, or to admonish us of an error, or of the imbecilities of art. So far its lessons, if properly applied, may be of the highest advantage."

From the above quotations, the reader may gain a tolerable insight into Dr. P.'s views of the value of morbid anatomy. He will detect two leading ideas: the paramount importance of the vital signs, or symptoms, to the understanding of disease, and the inference that morbid anatomy is principally available to the physician after his patient is dead. Both these points are worth examining. And in the first place we would ask, what is the exact amount of practical good we have derived from the simple study of the vital phenomena in relation to disease? It has certainly exercised the minds of many men of fine talent; it has given full scope to ingenuity in planning and perfecting theories, in a word, it has filled the world with a multitude of books, which the student may read and admire and forget during the progress of a long life. Let any one try the experiment, and we think, if the love of certain and definite knowledge is strong within him, that like M. Louis he will throw by the greater part of all this, which is but the rubbish of antiquity, and begin for himself the study of nature. The miserable influence of the mere study of symptoms on the progress of medicine, is well illustrated by the numerous systems of nosology that have bewildered the mind of the student in his attempt to know what diseases are. These may be taken, apart from any classical refinements which may attach to them, as fair illustrations of the state of medical knowledge among the book-lovers of the profession, at the time they were published. And what good have they effected? Ask the student, who has pored over their pages in despair, till he has lost all confidence in himself and in science. The true, and only classification of disease is in morbid anatomy; and it is this fact, now beginning to be realized, and finally no doubt, to be carried out into full practice, that will raise medicine from an uncertain art, to the comparative perfection of a science. But in this view of the question, we would not undervalue the importance of the vital phenomena in the understanding of disease; resting on a firm basis, they are invaluable; regarded by themselves, they are comparatively useless. Take for instance, a chain of symptoms which multiplied experience has shown to be uniformly connected with a certain organic change, and we then have *a disease* which we can reason about, and treat with definiteness, if not with success ; give us a series of symptoms without such connection with organic change, and we at once fall into empyricism and uncertainty. It is not pretended by any man of reflection, that this knowledge of organic changes, and their connection with certain symptoms, is the ultimate explanation of the phenomena of disease, but only that it is as far as we can go in our inquiries ; and this we repeat, is the great characteristic of the medical inquiries of this age—a disposition to stop within the actual limits of positive knowledge, leaving untouched the thousand questions that have perplexed our predecessors, and filled our libraries with large volumes, which are at best, but monuments of folly.

Again, if, as according to Dr. Paine, by the present mode of studying morbid anatomy "no just conclusions can be formed as to the nature of the action, or the mode of treatment, till the patient is dead," then this study would indeed be of all things the most useless and ridiculous. There are men, for we have known them, who are contented to potter over a dead body, and note down the consistence of this organ, the colour of that, &c., without knowing anything of either of the general or local symptoms of the case ; and they call this studying morbid anatomy. We will not even undervalue this, for the frequent observation of morbid changes, considered in itself simply, improves our capacity for distinguishing these changes with accuracy. But this is not morbid anatomy, considered as a science worthy the pursuit of the intelligent practitioner. There is this fundamental error in all that Dr. Paine has written upon this subject, in supposing that the great men who labour at the head of the anatomical school, as he denominates it, are mere inspectors of the dead. It is true that books have been written, and expensive plates have been published, illustrating the simple anatomical changes of organs. These elementary teachings are necessary to the student, to enable him to distinguish, *per se*, one organic change from another—to distinguish, for example, tubercle from cancer, or inflammation from mere congestion. But the whole of morbid anatomy, as a science, is based upon a minute comparison of the symptoms noted during life with the changes noticed after death, and the practical value of this study is to enable us to infer by a knowledge of the symptoms *before death*, the degree and nature of the organic lesion on which they depend.

To contend that the organic lesions noticed after death do not constitute *the disease*, is unquestionably correct ; the essence of disease still escapes us, we are only witnessing its effects. But still, do we not gain a vast deal of precision in our knowledge, both as to diagnosis and treatment, by a careful study of these lesions? Why is it that external, or surgical diseases, are much more clearly understood and their treatment settled on better principles than those strictly medical, except that the organic changes which accompany them are better understood and their varieties more accurately classified?

Indeed, a comprehensive survey of medicine during the last half century is enough, we think, to satisfy every candid student, that morbid anatomy in its just acceptation, and we think it deserves a much more distinguished place than Dr. Paine allows, lies at the very foundation of most of our positive knowledge of disease. That with its more attentive cultivation much of the uncertainty that formerly overhung the diseases best known has disappeared; that, in one sense, *new diseases have been brought into existence by its light;* that treatment has been improved by placing it on a rational foundation, by teaching us that certain diseases have a *self-limited* existence, and that others are, in their nature, incurable. It would, indeed, be a great triumph for this branch of study, had it only aided us in the better understanding of the diagnosis of disease.

Dr. Paine, somewhere in his Essay, condemns the morbid anatomists for having left the path of Hunter and Bichat. We certainly look upon both these distinguished men as morbid anatomists, and that too of the highest order. The latter lived in the dissecting room, and in fact, almost died there. In relation to Hunter, our author also somewhere remarks, that he prosecuted his great inquiries without the aid of a single dissection. That Hunter was the first morbid anatomist of his day, his own cotemporaries admitted. Being called some distance from London, to give evidence as to the post-mortem appearances in a case of suspected poisoning, the following passed between him and the counsel: "You have been long in the habit of dissecting human subjects? I presume you have dissected more than any man in Europe." "I have dissected some thousands during these 33 years."* But these men of genius were more than morbid anatomists: they were capable of generalizing the facts they observed, and of looking somewhat perhaps into the mysteries of disease Yet we very much question whether the real, practical good they have conferred on the science of medicine, is not much more limited than many of their admirers will admit. The great object of Hunter's labours was to investigate the phenomena of inflammation. Up to a certain point he was perfectly successful. He pointed out the appearances it presents and the consequences that attend it. But he has not established its proximate cause, or its essential nature. The numerous theories that have been since published, as well as the commentaries upon his own writings, prove this. And Bichat — what well-established conclusions have his investigations left us of the nature of life, of the vital phenomena? He described the organization of the different tissues, he illustrated their modes of developement, and thus laid the foundation for the better study of disease ; but beyond this, all is speculation. We may love to soar with him in his flight, the company of men of genius can never fail to delight us, but when we ask ourselves calmly how much practical, positive good we have thus acquired, we shall be sadly disappointed in the result.

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* Trial of John Donellan Esq. for the murder of Sir Theodosius Boughton.

The second important question embraced in Dr. Paine's inquiries, is *the importance of the numerical method*, as it is called, in the investigations of disease. Our author condemns this method altogether: he appears to see no good in it, but the source of much error. We see in this view of the question an apt illustration of Dr. Paine's decided turn of mind. Every page of his writings proves him to be one of those who never halt between two opinions: he may be decidedly right or decidedly wrong, but he is sure to be one or the other. For ourselves, we look upon the numerical method as having contributed a great deal of good to the science of medicine, as well as, without doubt, considerable harm. But before condemning it, we ought certainly to inquire whether the evils that may attend it are inherent, or are owing to the imperfect manner in which it has been practised.

And in the first place, it may be said, that the numerical method is but a mode of putting our experience into a definite and exact shape. Every practitioner who has seen disease and remembered it, must and does act upon this principle. He forms an opinion as to the result of the phenomena of disease in a certain case, and of the operation of his remedies too, from what he has noticed before in other cases. His knowledge from this source may be either very limited, or extremely confused and indefinite, but it is all he has, unless it be such as he has obtained, at second hand, from books and lectures. If this be a true statement, is it not perfectly clear, that if his experience can by any process be rendered more exact, its results will be more available and certain? We all start from the same point — that experience is the true source of knowledge. Will not he then who is obliged, by adopting a certain system, to keep an exact record of his cases as they occur, and to compare them carefully with each other after they are collected, arrive at much safer conclusions, than him who trusts solely to general impressions, or to a partial comparison of facts? It has always appeared to us that those who unreservedly condemn this method, must overlook entirely the view we have just presented; if they are practical men at all, they have been practising it — unconsciously perhaps, and no doubt imperfectly.

But some of the evils of this method are very prominent ones. If, when properly practised it leads us to definite truths, so if practised imperfectly it will lead us equally into confirmed error. All apparent facts are not facts, and yet ignorant of this, we may often grasp the wrong for the right, and become as thoroughly convinced as if we were walking in the broad light of truth. Hence the pursuit of the numerical method in the study of medicine, requires a combination of qualities which few possess. A talent for the simple observation of facts, the first fundamental requisite, is a rare gift; few even see clearly, or hear distinctly; the very foundation of many of the most flagrant errors that have perplexed the science of medicine, will be found in the imperfect observation of simple phenomena. And yet we find authors quoted who do not even present us with facts, but only with opinions. No greater improvement has taken place in modern medical literature, than the necessity now imposed upon authors who wish to be believed, of stating not their opinions, but the facts on which these opinions are founded; and this implies a confidence in the value of the numerical method. As we extend our acquaintance among practitioners, as we read and compare their published cases, we learn very often with deep regret the results which careless habits and imperfect education infallibly produce.

But the imperfect observation of facts is not the only difficulty. There are but few men who enter upon the investigation of disease without some previous theory to support. Indeed, it is this which often leads them to investigate, and thus facts become distorted or coloured, by the medium through which they are seen. Partial generalizations are attempted, imposing because sustained by apparent facts, which when examined, convey a very different meaning.

It has, again, been objected to the numerical method, that it requires great opportunities, which few enjoy: but this is no argument against the method itself. If large hospitals are required to its full exercise, let us seek to turn such institutions to a good account, if the method itself is correct. But still, every physician is well educated, according to the amount of real experience he has acquired, and not according to the number of cases he has seen, and this will depend as much upon himself as upon his opportunities. There are those, however, who possess every requisite for the successful prosecution of medicine, and the profession is fast giving them the highest place in their good opinion.

Another objection, perhaps equally important, that may be brought against this method of study is, that it has not been restricted within just limits. Applied to its legitimate object, the illustration of the natural history of disease, and in the hands of those who are capable of using it, its advantages are beyond a doubt. But even under the most favourable circumstances, it can only be regarded as approximating the truth. Yet every new and well-directed effort may add something to the certainty of our knowledge, until at length pathology shall reach that degree of perfection of which it is capable. To be convinced of how much may be done, we need only reflect upon how much has been effected by careful and honest observers in relation to our most common diseases. What diseases are now better understood than phthisis, or pneumonia, or phlegmasia dolens, both as to their seat, their duration, their mode of termination, and in fact, in relation to most particulars connected with their natural history?

But the advantages of this method, as applied to the *treatment* of disease are more than doubtful; yet even here there must be an approximation to the truth. How near we may ever arrive at just conclusions of treatment by this method is yet to be decided; but we must admit that the efforts, and those too of capable men, have signally failed in satisfying the minds of unprejudiced practitioners as to its great value. Diseases the best understood have been subjected to the test, and results more widely different could hardly have been anticipated. If we compare these with the almost uniform results established by different observers, in their investigations of the pathology of diseases, we shall see at once that some great difficulty lies at the bottom of the matter. Why is it that quack remedies, that homœopathic doses gain so much celebrity? Can we for a moment suppose that they gain it by curing disease? or if they succeed once, would not their indiscriminate and improper application cause them to fail a hundred times? This can only be explained by the fact which is every day getting more and more to be believed, and which explains, in part at least, the difficulty we are now considering, that many diseases have a definite course, and that nature is quite able to carry them through to the restoration of health without material aid from art, or even in spite of misguided efforts.

But we do not mean to undervalue the efforts of well-directed treatment in the relief and cure of disease. We have no faith in "pure expectation," although we have seen its operation on the most extended scale. It appears quite certain, however, that we can at best, aid nature in her operations, and that not knowing what to do we had better do nothing.

There is another difficulty in this application of the numerical method to the treatment of disease, which lies in the fact, that the indications for treatment, in two cases of even the same disease, are never precisely similar. Take for instance two apparently similar cases of inflammation, in which the propriety of bloodletting is distinctly recognised by all practitioners. Yet one will require the loss of more blood than the other, and that too from the combination of a multitude of circumstances, some of which can be foreseen, and others not. Thus the treatment of every case, even the simplest, is in one sense *an experiment*, about which we can form no certain conclusions until the result proves us to be right or wrong.

In estimating the value of the numerical method, we must not forget one important consideration. If applied to the proper subjects of statistical inquiry, and in the hands of those who are able to use it with full advantage, it has proved the source of much positive knowledge, so also in such hands, it becomes the best means we possess of communicating knowledge to others. The mere opinions of writers have ceased to exert much influence, for the reason that they are so conflicting ; because they are founded on such imperfect data, and often, so far as we can ascertain, upon no data at all. But by the numerical method, an author's experience is exactly placed before us. Unless we suppose him capable of deliberate falsehood, we learn the extent of his opportunities, and from his recorded cases, we can judge of the accuracy of his observation. The advantage of this mode of teaching others, must be evident to every one who is at all familiar with works of this description.

Dr. Paine, as we have already remarked, has at the close of his Commentaries, left the discussion of general and particular questions relating to medical science to attack the labours of an individual, and one of the most distinguished writers of the present day. That our author is perfectly sincere and honest in his condemnation, we have no doubt whatever ; but we regret none the less the attempt he has made to crush one whose position is so firmly fixed in our medical literature. The numerous admirers of M. Louis cannot indeed fail to be shocked, as well as surprised at the bold denunciations that are poured out against him. They have this consolation however, that the thunder which rolls so louldy does not shatter, and that while a few may pause and wonder, none will be convinced. In making these remarks, we would not be guilty of undervaluing Dr. Paine's labours ; but there never has yet, in our times at least, existed an author of sufficient talent or influence to check the flowing current of enlightened opinion. We know that there exist among us those who attempt to ridicule the science of medicine, as pursued in France, but we have been accustomed to smile quietly at such remarks, knowing very well that their authors knew very little about the matter. But this is not the case with Dr. Paine. He is certainly well read in French medical literature, yet we doubt not, if like many other men among us, he had seen with his own eyes what he has only read, he would have seen much to admire in all that he now treats with censure and even with contempt.

To our minds, the fundamental reason, and indeed the best excuse that can be offered for Dr. Paine's attack upon M. Louis, lies in the entirely opposite mental constitution of these two authors. They are the direct opposites of each other, so that notwithstanding the high rank which Dr. Paine may justly claim as a medical writer and scholar, M. Louis, if he should happen to read his writings, would find full as much to criticise and condemn as his opponent has done. It is for the medical profession to decide which is in the right; for ourselves, we have no fears as to how the scale will turn.

The following will convey to our readers some idea of Dr. Paine's opinions in relation to the author whose writings he has attempted to criticise.

> "With every sentiment of respect for the opinions of those who differ from us, as to our author's work on the typhoid fever, as well as his other performances, we are constrained to express our conviction that one more obnoxious to the objections we have thus far stated, *or more dangerous in its practical tendencies*, has not issued from the press since the appearance of Brown's 'Elements of Medicine.'" * * *
>
> "His researches have become a great land-mark in the field of medicine. Their importance is but little concerned about abstract facts; they relate to great fundamental principles. He has contributed more than any other, towards unsettling the philosophical inductions of Hunter, Bichat, and others, whose *very facts* he puts aside as unworthy of record. He has avowedly aspired at pulling down the superstructure which has been reared upon the phenomena of nature, as contemplated when revealing her vital actions and laws." * * *
>
> "After our author published his book on Phthisis, which is scarcely less remarkable for its generalizations from a small number of observations, he was to surprise the world with a variety of new hypotheses and principles founded on the typhoid affection. It appears to have been a primary object to cover this disease with mysteries," &c. * * *
>
> "Upon these cases, too is erected the most stupendous system of practical errors resolved into universal 'laws,' and often extended by a false 'analogy,' and '*a priori*' conclusions to other diseases of the gravest nature."

But what is this stupendous system of practical errors of which Dr.

Paine complains so loudly? How has M. Louis covered the subject of typhoid fever with mysteries? What are the instances of false analogy which his works present?

We have no intention, at present, to attempt a full examination of Dr. Paine's criticisms. To do this would carry us far beyond the limits assigned to us; and besides, we freely confess a want of inclination to undertake the task. We are so well assured that the reputation of M. Louis has been so honestly acquired, and is now so firmly fixed that nothing can shake it. His writings must stand forever as they now stand, monuments of the most untiring industry, of the most patient and we may add perfect observation, of the most scrupulous honesty and love of truth. Indeed we believe, and we say it after considerable personal acquaintance, that no author of the present day is a more devoted lover of truth for its own sake, or has shown a more ready disposition to make every sacrifice for its progress. That M. Louis is not a man of genius in the highest acceptation of that term we are ready to admit, that he has committed errors we will not deny, even in the limited range of study to which he has devoted himself. But in the works of what writer shall we find more that is true — more facts well observed and well digested? No leader anxious for popularity merely, would ever have pursued the course he has adopted. Inculcating upon his followers long preparation, the most careful sifting of facts, much delay in arriving at conclusion, he has pointed out a course in which few will be willing to follow, but a course on which the foundation of medical science is built — the guarantee to its future progress.

But not to pass over these criticisms of Dr. Paine with a simple expression of opinion, we will take a few pages of the first portion of his Essay and examine them with some care.

One of the first objections brought by Dr. Paine, is that M. Louis sets his face against the whole of antiquity as unable to teach us the true principles of medical science. If however M. Louis is wrong in his indiscriminate condemnation, Dr. Paine appears to us no less so in his excessive admiration of the old authors. The great mass of medical readers will, we fear, be still disposed to derive their opinions of antiquity at second hand. Notwithstanding Dr. Paine asserts that Hippocrates was a very respectable healthy as well as morbid anatomist, we still do not find his opinions on these subjects in the best modern works, which is an act of great injustice; neither do we find his opinions as to facts in connection with the pathology of disease often quoted except by the learned, although, we doubt not that all which he really knew is still before the profession, being incorporated into the accumulated knowledge of long centuries. For ourselves we profess to choose those for our guides, who standing on the broad shoulders of the father of medicine, have seen far beyond the range of his vision. With increasing light new modes of inquiry have sprung up, new means of investigation have been discovered, and above all, the limits of actual knowledge have been defined. If M. Louis has shown so little respect for antiquity, this very failing has brought to light more distinctly the advantages of a new mode of study. Changes that are gradual are always linked with errors, until at length the true reformer appears, more settled in his principles than his predecessors, and the world begin to recognise distinctly the ground on which he stands, and as well as the real change that has been effected. That the doctrines of such an one may tend to ultraism is not surprising. We will not however advocate the exclusive doctrine that the fathers of medicine are of no account; if their works are comparatively useless to us, it is because the many truths they contain have become a part of our confirmed belief, and incorporated into our best and standard works. If the minute study of the phenomena of disease during life, and a careful comparison of these with the changes noticed after death, is the only course by which the true progress of medical science can be advanced, then we of this age need not fear to stand up boldly and advocate our claims — losing no proper respect for the past that we may profit the more by its errors.

The first thing says Dr. Paine, which strikes us with astonishment, is M. Louis' departure from his system of rigorous facts — is the broad affirmation that a lesion of Peyer's glands may be considered as the anatomical characteristic of typhus fever, because it was found in 50 cases having the symptoms of this disease, and absent in 83 other cases of acute disease in which these symptoms were not present. "Such then, again says Dr. Paine in reference to this same point, is our author's first generalization of 50 cases; designed for every climate, constitution, habit, and other predisposing and exciting causes." Now this conclusion we contend is entirely unwarranted and absolutely unfounded. M. Louis never said, or as much as hinted, that the description of the fever he has given to the profession is intended for every climate, &c. It is simply an analysis of 50 cases of fever that *occurred in Paris.* If, as Dr. Paine contends, the cases observed are too few to establish a general law, we would ask were shall we find in any author who has described a particular disease a greater number of cases? The labour of observing 50 cases of disease, and of comparing them with 83 other cases of acute disease, and performed as M. Louis has done it, is immense. And if we recollect that individual experience is not proportionate to the number of cases an observer may have witnessed, but also to the care and accuracy with which he has studied them, we shall gain still greater confidence in M. Louis' conclusions. Indeed has not subsequent experience, in the hundreds, perhaps thousands of cases of typhoid fever that have been examined in Paris since the publication of his work, and with the direct object of proving the truth, established beyond a doubt the wonderful accuracy of his conclusions? That the fever of Great Britain and of other countries is wanting in the anatomical characteristic of that of Paris, is no argument against the soundness of these conclusions. For M. Louis never described the fever of Great Britain, or pretended that the fever of that, or of any other country, was the same disease as the fever of Paris. Indeed do not his observations on the yellow fever of Gibraltar, collected long before the work of typhoid fever was published, prove conclusively that he recognised a form of fever with an anatomical characteristic entirely distinct. In truth M. Louis' great merit consists in describing nothing but what has fallen under his own eyes; we who know his astonishing powers of observation know best how to believe him.

If his facts have not been confirmed in other countries, it is because disease is modified by locality, and climate, and many other causes. But even admitting this, the value of M. Louis' 50 cases is immense to the profession. They have formed the starting point for numerous investigations at the hands of others; they have taught practitioners how to observe, and what are the legitimate objects of inquiry; the full practical advantage of all this we have not yet seen. Experience seems already to have almost proved that fever at least, is accompanied by different organic changes in different countries, and that other diseases are sometimes accompanied by the anatomical characteristic of M. Louis — let this be once fairly established, and this distinguished observer will at once adopt it; indeed we know very well that he is looking with an attentive eye to the final result, and that he has contributed his own personal influence, as far as possible, to promote it.

There is another point closely connected with the preceding about which we wish here to say a word. It is in relation to M. Louis' opinion that this affection of Peyer's glands is *the disease* — fever. Now a disease may have an anatomical characteristic, and yet the disease be something else. For this term, as we understand it, means nothing more than this — in a certain disease there is an organic change of some particular part, which is constant, and therefore without it the disease cannot be said to exist, at least we cannot be certain of its existence. Thus the peculiar eruption in smallpox, in measles, &c., is the anatomical characteristic of these affections, but no one thinks of calling them *the* *disease*, no one thinks of referring the delirium, &c., which may occur to the eruption. It is precisely this view we take of the typhoid fever of Paris. But we must admit that M. Louis does not consider the subject in this light. Notwithstanding the highly respectable opinion of some of M. Louis' supporters, we fully join with Dr. Paine in thinking that the writings of this author fully justify the conclusion that he does regard the affection of Peyer's glands as the disease, referring the delirium and other remote symptoms directly to it. Indeed we entertained the same opinion long before Dr. Paine published his Commentary, and have often wondered how so acute a mind could rest satisfied with such a conclusion.

But we pass to Dr. Paine's next ground of complaint; it may be found in the following quotation:

> "An excellent mode of arresting diseases is to confound them; (1) [since] what importance is it, with respect to effects, for us to know what is the cause of trouble in our functions, when this trouble is of a serious nature?" (2)

Here in this apparently single sentence, we have in fact parts of two sentences, the first taken from M. Louis' work on bloodletting, where he is discussing one subject, and the second from the work on typhoid fever in connection with an entirely different question. This mode of quotation reminds us of the individual who undertook to prove that suicide was inculcated by scriptural authority. "And Judas went out and hung himself; go thou and do likewise." The whole paragraph in which the first portion of the above quotation stands is very short, and may easily be quoted.

> "What need have I to call to mind, that an excellent mode of arresting (*jugular* is the original,) diseases is to confound them, or indeed not to distinguish the *period of the disease* when such and such remedies are applied; as I have observed in the previous chapter."

Now what is said by M. Louis in the previous chapter on this subject?

> "It results from the facts brought forward in this chapter, that bloodletting has exerted but little influence on the progress of pneumonia, erysipelas of the face, and angina of the throat, *in the patients that have fallen under my observation*; that its influence was not more decided in those cases where it was copious and repeated, than in those in which it was resorted to but once, and that with moderation; *that we cannot arrest the progress of diseases* as *some* pretend to do: that in those cases where this object is *apparently* affected — it is either because there has been an error in the diagnosis, or because bloodletting was not resorted to until a *late period* of the disease, *when it was near its natural termination* [quand celle-ci était voisine de son declin."]

(1) On Bloodletting, p. 31.

(2) On Typhoid Fever, vol. ii. p. 145.

Indeed the expression "an excellent mode of arresting diseases is to confound them," and which Dr. Paine triumphantly quotes in more places than one, is entirely *ironical*, and intended as a hit at Bouillaud and others,* who have constructed tables of the effects of treatment without considering the period of the disease when the treatment was commenced. M. Louis believes with many other distinguished observers even in this country,† that certain diseases have a definite duration which art cannot abridge. We all believe this with regard to the eruptive fevers, as smallpox, &c. this author extends the same belief to pneumonia, erysipelas, &c. and thinks that this must have a great influence in judging of the effects of treatment. "A new proof," he remarks in the chapter from which we have already quoted, "of the necessity of an exact knowledge of the *natural course* of diseases in order to judge correctly of the value and action of remedies."

The second clause in Dr. Paine's quotation, which he also delights in more than once, as bearing strongly against the good sense and correct judgement of M. Louis, is taken from the work on typhoid fever; and considered in its proper connection seems to us a very reasonable and just remark. The whole paragraph is as follows: he has been speaking of the cause of the delirium in fever, and in febrile diseases.

> "In this place a remark naturally presents itself; in fact, I have already noticed it, but I think it will not be less useful to recur to it now, viz. that we have not any right to say, because there is a want of connection between the cerebral symptoms and the condition of the encephalon, that, consequently, the brain had no influence upon the ISSUE of the disease; for this influence exists and must be considerable, since at the appearance of the cerebral symptoms, others either cease entirely, diminish, or are stopped in their course. What importance is it, however, with respect to *effects*, to know what is the cause of trouble in our functions when that trouble is of a serious nature? Dyspnœa, if it is extreme, *may produce death*, whatever may be the *cause of it*, whether we can or cannot explain it by the condition of the organs; such is the case with syncope. *We must, therefore, in the cases in which the sensible alterations of the organs do not explain the death of the patients, take account of the condition of the functions, and especially of the cerebral functions.*"

We are perfectly willing to have this opinion read in its proper connection, and so freely criticised by Dr. Paine, to the good sense and judgement of our readers, without comment.

Dr. Paine next undertakes to prove that M. Louis entertains the most mistaken ideas of the value of analogy in the illustrations of medical questions. That M. Louis entertains very different ideas of this subject from Dr. P. is very true. But which is right? Those who have read Dr. Paine's work can easily answer how far his arguments drawn from analogy have satisfied them. Read some of his remarks in the case before us.

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* See Grisolle, Mémoire sur la Pneumonie, Jour. Hebdomidaire, Nos. 29, 30, 31.

† See Prof. Bigelow's Lecture on Self-limited Diseases. Boston.

> "Our author, for instance, has no conception of disease that *he cannot trace out through some lesion of structure;* and when he endeavours to insinuate the belief that diarrhœa cannot exist 'without appreciable lesion of the intestinal mucous membrane,' he fears that his hypothesis may find some opposition from analogies supplied by the natural conditions of the body. He therefore says, "We may presume that it may exist without, from the analogy existing between diarrhœa and more or less profuse perspiration. But of this we cannot be positive; for, in our opinion, *analogy is only useful to point out fresh subjects for investigation, to lead us to the discovery of facts.*"

"Such," goes on Dr. Paine, "is ever the winding up of our author's syllogism [syllogism?] "You are left with the belief that analogy is little better than an absurdity," &c.

Now we are equally willing to leave this view of the value of analogy as expressed by the above quotation from M. Louis' work on Phthisis, to the good sense and reflection of the reader. That it contains the true and legitimate use of analogy we are well convinced. We wish only to call the attention of our readers to other remarks we have quoted from Dr. Paine, "that our author has no conception of disease which he cannot trace out through some lesion of structure," and which to us looks very much like an assertion. If the reader will turn to the work on Typhoid Fever, article, "Causes of Death in this Disease," he will find the following concluding paragraphs:

> "I will make, in addition to all this, another remark. Cases of sudden, or at least of speedy, and unexpected death during the convalescence of some trifling disease, or even during a state of apparently good health, *and which we cannot explain by the state in which we find the organs, are not very uncommon;* thus instead of being astonished at not being able to explain the death of patients by the disorder of the organ primarily affected, we ought to be surprised at being able to do this so often by the examination of the other viscera, &c.
>
> "Another circumstance ought not to escape our notice. That the alterations of the functions (symptoms,) whatever may be the cause of this alteration, and *whether it be appreciable or not,* ought to be taken into account in the consideration of the subject before us, &c.

> "Here again," says Dr. Paine, "is not an unusual instance, as we shall show, of our author's use of *analogy* and of the 'numerical system.'
>
> "It is only necessary, he says, [M. Louis] to have met a *single example, to feel convinced* that in many instances, inflammation and tubercles in the lungs are independent of each other."

It is easy to see what use Dr. Paine intends to make of this quotation; but let us turn to the original and see what we find there. The author is considering the influence of pulmonary catarrh in the production of tubercles in the lungs. After remarking that the bronchi in the immediate neighbourhood of crude tubercles are commonly in their natural condition, while those that communicate with tuberculous abscesses are commonly inflamed, he draws the natural conclusion that this inflammation may be owing to the irritation of the matter of these abscesses passing constantly through these tubes in being expectorated. He then goes on to remark farther. "In those patients who die of some disease different from phthisis, but with crude tubercles or gray granulations in the lungs, we *almost always* find the bronchi perfectly natural, both in colour and thickness. *Facts of this kind are not rare; we have lately even, witnessed several such;* and it is enough to have met a single example to feel convinced that *in many instances* tubercles in the lungs are independent of inflammation."

How different does all this appear when presented in its proper connection, instead of having not even a whole sentence, but only a *fragment* of a sentence torn from its connection and placed before us. Indeed the reader will now at once perceive by the above quotation, that M. Louis was not then using the numerical method, at least in the sense he understands and applies it.

We might go on to offer our readers some of the opinions and criticisms of Dr. Paine on Morbid Anatomy as exhibited in the writings of M. Louis. But this would be entering upon a new branch of the subject; we are therefore warned not to make the attempt, fearing that we have already carried our remarks beyond the patience of our readers. We will therefore finish all we intend to offer in relation to Dr. Paine's work. A useful and perhaps far more important topic for consideration, would be the general tendency and influence of his undertaking on the progress of our medical literature. In many points of view it certainly surpasses every other work that has ever been issued from the American press. But we question whether many will not think that the kind of learning it exhibits, and the character of many of the subjects discussed, are better adapted to another age than to our own. Is it not true, that many of the questions which are discussed, have already been brought before the profession with equal learning and ingenuity, and have only remained unsettled because, from their very nature, they are incapable of absolute proof? In executing the task that has fallen to us, while we have never hesitated a moment to express a candid and honest opinion, we have endeavoured to evince that respect for the learning, talents, and high personal character of the author, which we most sincerely feel. There are those who know that we were anxious even, to place the undertaking in abler hands; and we doubt not had we been more successful, many excellencies which we have not appreciated, would have been brought before our readers. As it is, we earnestly recommend to every intelligent physician to read the work and judge for himself. It is a duty we owe to Dr. Paine, who has laboured in the very midst of us for our benefit, and for the medical reputation of our city, to judge of his labours only after a careful examination. Of this we feel well assured, that those who differ from him the most, will find much to admire — many rich sources of instruction by which they may profit and improve. J. A. S.

The modern treatment of Syphilitic diseases, both primary and secondary; comprising an account of the new remedies, with numerous formulæ for their preparation, and mode of administration. By Langston Parker, Member of the Royal College of Surgeons, and Fellow of the Royal Medical and Chirurgical Society of London, etc. London, 1839, 12mo. pp. 158. (Republished in Dunglison's Medical Library.)

The profession, and especially the junior part of it, must acknowledge its obligations to Mr. P. for the lucid and candid manner in which he has presented to them, within such moderate limits, the practical and essential principles of the treatment of syphilitic diseases, as furnished by the results of *modern* experience on the subject. The varied and indeed directly opposing theories and opinions of writers on syphilis, and the scattered form in which many therapeutic principles of the highest value, either in journals, or in works of difficult access to the majority, unite in rendering a work like the present peculiarly acceptable. Adopting the writings of Wallace, Desruelles, Cullerier, and particularly of Ricord, for his basis, our author affords us a sure pledge of his candour with respect to one of the most contested points, the use of mercury, while the well known reputation of these names gives every guarantee on the score of authority. Avoiding the two extremes of blind adherence to its indiscriminate use on the one hand, and its entire banishment on the other, he states, with the greatest clearness and precision, the reasons for its employment, the cases to which it is applicable, and those which forbid its use, the period of time for its continuance, and what is of still greater importance, the symptoms indicating its discontinuance both in the primary symptoms and in the constitution, and with a degree of judgment and consistency which proves that he is under the influence of no theory, and bows to the authority of no individual name.

If called on to point out the most valuable *general* principle in the treatment of syphilitic diseases, which may be considered as one of the results of modern experience, we should mention the one insisted on by M. Ricord with so much earnestness, and to which Mr. P. also directs particular attention, viz. that "the varied appearances of primary venereal sores, and the characters they afterwards assume, depend very much, if not altogether, upon the natural constitution of the patient, and upon the particular condition of his health at the time he imbibes the venereal poison," and that our treatment must be regulated accordingly. The practical bearings of such a principle will be appreciated at once, and also the relief it affords us from the nice distinctions and refinements in the classification of primary sores which so much embarrass the junior practitioner, and are so entirely overlooked by those more familiar with the subject. But we must confine ourselves to a mere *notice* of the work before us, and will therefore only add an outline of the topics discussed, and the order of their arrangement. Our author commences with a brief but clear view of the two leading modes of treatment, the "simple," as it is called, and the mercurial, both local and constitutional, which is followed by an account of the particular preparations of mercury, and their mode of employment. After a section on inoculation as applied to the diagnosis and treatment of these diseases, he next describes balanitis and its mode of treatment, and then gives with great fidelity the leading characteristics of gonorrhœa, both in the male and female, with special reference to its varieties as to its seat in both sexes, and its consequences and terminations in both, and a full account of the different modes of treatment, both local and general, with numerous formulæ for both internal use and injections. He is a decided advocate for the use of the speculum vaginæ as the only means of diagnosis in some cases between gonorrhœa and leucorrhœa, and as also of indispensable utility in other cases of female disease. He next passes to ulcers or primary venereal sores, which he describes, under three forms, according to Ricord, and as having two marked and distinct stages (a point, by the way, of great practical importance,) and the different modes of treatment, and the varieties depending on their seat, as in the urethra, and on their particular character, as phagedænic primary sores, with the modification of treatment necessary in such cases. We have next a very valuable chapter on bubo, followed by one on constitutional or secondary syphilis, and another on the syphilitic diseases of the skin, in which he details the leading features of these affections, preceded by a summary of the general principles of treatment, and accompanied by an account of the treatment more particularly suited to each form. A short account is then given of the "tertiary" symptoms of Ricord and their treatment, pains in the bones, periostitis, and ostitis, and then a description of the operation for the relief of phimosis as practised by that surgeon, with which the book concludes. The many new remedies which have been added to our list, are introduced under their appropriate heads, and their therapeutic value discussed, and the work is rendered very valuable for reference by the numerous formulæ with which it abounds. We would add, in conclusion, that we have rarely met with a book which it would be safer neither to add to nor abridge, and that we know of none on the subject of syphilis which can be consulted with so much satisfaction by the practitioner, or with so much safety to the patient.

We are happy to find that its place of usefulness has been so much enlarged, by being embodied in the very valuable repository of Dr. Dunglison.

H. D. B.

Saratoga Waters, or the Invalid at Saratoga. By M. L. North, M. D. a resident Physician. New-York, M. W. Dodd, 1840, 12mo. pp. 70.

This little work, written rather for the benefit of invalids who may be anxious to ascertain the real virtues of the Saratoga waters, than for the professional reader, is yet well worthy the perusal of the latter, especially of those whose attention has not yet been drawn sufficiently to the subject.

Remarks on Fractures. By A. L. Pierson, M. D. Boston, 1840, 8vo. pp. 115.

This essay constitutes a portion of the transactions of the Massachusetts Medical Society, and comes to us bound up in separate form. After a hurried perusal we are disposed to look upon it as a succinct, lucid, and sensible exposition of the present state of surgical science on the pathology and treatment of fractures. The tables appended to it, drawn from the records of the Massachusetts General Hospital, and giving summary views of all the cases of fracture ever treated in that institution, add materially to its value.

J. W.

SCIENTIFIC INTELLIGENCE.

Proceedings of the New-York Medical and Surgical Society. Regular Meeting, March 7th, 1840.

THE President in the chair; nineteen members present.

Dr. Buck concluded the reading of his essay on Hernia Cerebri.

Dr. Beadle mentioned that he had twice, within the year, had a young man under his care for an affection of the urethra, resembling gonorrhœa in all its symptoms, except there was not the slightest discharge. The patient, in 48 hours after each connection, (which there was good reason to suppose might have been impure,) had itching about the orifice of the urethra, which on examination was found red and swelled. The irritation soon extended along the urethra to the bulb, causing a sensation of painful itching, precisely such as he had felt in previous attacks of gonorrhœa, and was attended with some ardor urinæ. When Dr. B. first saw him, the usual treatment for clap had been employed for two or three weeks, without any relief of symptoms. An injection of Nit. Argent. gr. iij. to the oz. with mucilaginous drinks, cured him very speedily in both instances.

Case of absence of the uterus. Dr. Isaac E. Taylor reported the following case:

Mrs. McM****, residing in Lewis street, consulted me June 14th, 1839, for a retention of her catamenia. She had been under the care of several medical gentlemen for the last three years, without any benefit. She is well formed, and her appearance healthy, though not as healthy as she was three years ago. Her age is 23, has been married four years. She has the ordinary symptoms incident to the attempt for her catamenia to commence, besides intense labour-like pains, which are so aggravated at times as almost to deprive her of her reason; these pains continuing every month for eight or nine days with partial remissions, without any secretion taking place from the vagina, or any vicarious discharge from any other organ. The periodical attacks commenced when she was 15 years of age. Concluding from her statement that some obstruction existed at the os uteri, I advised an examination, supposing that if any did exist, that the method recommended by Dr. McIntosh might be put in requisition. On examination, my finger met with an obstruction, which prevented it from passing further than the first joint of the forefinger. This induced me to ask for an inspection of the parts, which she reluctantly consented to, and I discovered that the finger could be passed to the extent of an inch—that there was a small orifice resembling the meatus urinarius, directly below it, into which a probe was inserted, and carried up no further. The finger then passed round the os externum, felt at the posterior portion of the vagina another orifice about three-fourths of an inch from the fourchette, which proved this was only a small membrane passing obliquely backwards; this was divided with a bistoury, and the finger then introduced made no further entrance, and no os uteri could be felt by the finger, nor seen by the use of the speculum. Bougies were tried to discover if there existed the least perforation that could admit of their being passed further up, but this elicited nothing more; in truth, the termination of the vagina could be seen by separating the labiæ, and the inch in length of the vagina was caused by the finger pushing it up. A further examination was resorted to by introducing the left forefinger into the rectum, whilst the catheter was introduced into the bladder, and supported by the thumb of the right hand, whilst the forefinger was in the vagina. The left forefinger could distinctly pass the right forefinger, and feel the end of the catheter in this organ. At this moment the bladder expelled its contents, and this organ could be distinctly felt behind the pubes, hard and of the size of a small egg, by the finger in the rectum. The finger was introduced also, separately into the vagina and rectum, but nothing like the uterus could be ascertained. No tumour could be felt when she was lying on the bed with the knees flexed on the abdomen. The external parts were well developed, orifice of the urethra natural, clitoris small, pubes well covered with hair, mammæ well formed and of good size; no swelling of the hypogastrium, and sexual appetite not deficient. Drs. M. Post and Peckham visited the case with me, and at my particular request, Dr. J. C. Cheesman also saw her. The same examination was also resorted to, but nothing more elicited. We were, therefore, from these examinations, constrained to believe that this was a case of congenital malformation, or absence of the uterus, unless it was situated very high up, and the vagina closed to the extent of more than three and a half to four inches. The question, from the perfect examination made, Could an operation be justifiable after the manner recommended by Amussat? brought to my mind the unsuccessful case of Dr. McFarlane of Glasgow, and we deemed it proper to advise that nothing should be attempted, which she was so solicitous for, solely because she was anxious to have a family, to gratify her husband. Her husband had never made any complaint of dissatisfaction, and it excited our curiosity to have an inspection of his "parts," should a suitable occasion offer. This afterwards occurred during an attack of dysentery under which he was suffering, and the penis was the size in thickness of a youth of 15 years, but the testicles were well developed.

Dr. Chew, of Baltimore, in his paper published in the May No. of the American Journal of Medical Sciences, has given the history of all the cases that have been published, with the exception of two cases by Burggrave, to which paper reference can be made for further information.

Regular Meeting, April 4th, 1840. *Twenty-three members present.*

Disease of the Bladder.—Dr. Post read the following case: J. C. a gilder, of good constitution, born in England, æt. 80 years. In former years he suffered much from stricture of the urethra, and was cured by the use of caustic bougies. He represents himself to have been entirely free from symptoms of stricture for a number of years past. I was called to see him on the 16th March, 1840. About a week before that time, he had had an attack of bronchitis, soon after which he began to be troubled with very frequent desire to void his urine, and the effort was attended with a great deal of pain and straining. The urine, on becoming cool, deposited a large quantity of thick ropy mucus. Soon after the commencement of this irritation of the bladder, the urine became deeply tinged with blood, the colour of which pervaded the part which remained fluid, as well as the mucous sediment at the bottom of the vessel. From the time when I first saw him, until the period of his death, he continued to suffer very severe pain, chiefly in the course of the urethra, from the frequent efforts to evacuate the bladder, which were repeated at intervals not exceeding five or ten minutes on an average, by day and by night. The whole quantity voided in 24 hours, amounted to about one and a half pints. There was no complaint of pain except during the effort to evacuate the bladder, and immediately afterwards. There was a slight degree of tenderness in the hypogastric region. Throughout the attack there was very little febrile excitement; the pulse ranged from 80 to 90. His intellect was not materially disturbed until within three or four days of his death. His tongue was slightly covered with a dirty white fur in the beginning, afterwards with a thick brown fur. Bowels costive, and with difficulty operated on by cathartic medicines. Enemata could not be retained, but passed out immediately by the side of the instrument. He died on the 30th March, apparently exhausted by his severe and protracted sufferings.

The treatment which was resorted to seemed to have very little effect in relieving the pain or controlling the disease. Leeches were twice applied to the perineum, and around the anus; warm fomentations to the perineum and hypogastric region. Dover's powders were administered at different times, alone, and in combination with camphor and acetate of lead. Balsam of copaiba, tincture of muriate of iron, infusion of diosma crenata, hydrocyanic acid were severally tried, but without any decided benefit. For a single day, the combination of camphor and Dover's powder, in doses of one grain of camphor and two grains of Dover's powder every two hours, appeared to diminish the severity of his pain, and he experienced for the time great relief; but on the following day, the same remedy did not seem to exert any beneficial influence. The bladder was twice injected with warm water, and afterwards with a solution of acetate of lead, gr. j. to ℥j. The injection appeared to exert a soothing influence, but its effect subsided in a very few minutes. Anodyne and emollient enemata were administered, but they were immediately rejected.

Autopsy, 20 *hours after death.* — An unusually large quantity of adipose tissue was found beneath the skin, and about the viscera. The rectum and sigmoid flexure of the colon were contracted to such a degree as not to exceed half an inch in diameter. The kidneys were entirely imbedded in adipose tissue, but their structure appeared to be normal. The bladder was nearly of the usual size, but somewhat thickened, and exceedingly loaded with fat. There were three pouches connected with its cavity by small circular orifices; one of these pouches was about the size of a hen's egg; the second, half that size; and the third as large as a filbert. The mucous membrane of the bladder appeared quite pale, and its surface was thickly studded with elevated patches, varying in size from a pin's head, to a split pea, of a grayish white colour, resembling mortar. These patches presented a granular appearance, and were rough to the feel. They seemed to be firmly connected with the mucous membrane, and when they were scraped off, a layer of the membrane was removed with them. The eminence which has been denominated the middle lobe of the prostate, projected into the neck of the bladder, forming a tumour as large as a small filbert. A portion of the right lobe of the prostate appeared to be converted into a cellular tissue with very large cells.

A pulsating tumour of the abdomen, that had been mistaken for aneurism. — *Dr. Clark* reported the case of a man 28 years of age, in the last stage of phthisis pulmonalis, extremely emaciated; presenting a tumour distinctly pulsating in the epigastrium, and extending an inch to the left of the medium line of the body. The aneurismal thrill was marked, but on account of great morbid sensitiveness of the skin, the patient could not bear the pressure necessary to ascertain its precise dimensions, or whether it varied in size with the systole and diastole of the heart. It gave to the stethoscope a loud *bruit de scie.* This sound was distinguishable as far downward as the femoral arteries, and upward to a little above the extremity of the sternum. It was inaudible over the heart and arch of the aorta. The man died three days after the examination, and autopsy showed that the tumour had been formed by the pancreas, of natural size, passing over the abdominal aorta. This organ had been brought into relief by the empty state of the stomach and intestines, and by the extreme emaciation of the abdominal walls. The aorta showed no marks of disease; but three and a half inches below the arch, on the posterior and right side of the vessel was observed a cord stretching across a small portion of its caliber. This bridge was formed by a few fibres of the elastic coat, and was covered by the lining membrane of the vessel. It strikingly resembled in length and position, one of the chordæ vocales of the larynx and had under and behind it a little sinus like the semilunar fossa. There was no reason to suppose it was a product of disease, it was believed to have been congenital. It is worthy of remark, that although the abnormal sound in this case was not audible through the walls of the chest, three inches *above* the point where it was produced, it was distinct in the direction of the current of blood, at the femoral arteries, 18 inches below that point.

A case of Typhoid Fever terminating in acute peritonitis. — *Dr. C.* also reported the case of a girl, 19 years of age, who had led a dissolute life, stout, of sanguineo-lymphatic temperament, was attacked of typhoid fever. The disease ran nearly its usual course till the eighteenth day. The typhoid eruption had appeared on the chest, arms, &c.; intellect was disturbed; there was deafness, moaning, prostration, tremulous and uncertain motion, but no gargouillment, or tenderness in the right iliac region, and no diarrhœa On the eighteenth day of the disease, marked symptoms of peritonitis occurred. The pain, tenderness, &c. that indicated its invasion, were soon followed by green vomiting, tympanitis, &c. and in three days by death. On post-mortem examination, the intestines, liver, and stomach, were found covered with a thick layer of plastic lymph; a small quantity of milky serum in the cavity of the abdomen. Lymph was found effused into the middle coat of the stomach, and what is believed to be very unusual, *between the layers of the peritoneal covering* of this organ. The mucous membrane of the stomach and of the jejunum was highly injected, but *no perforation* could be discovered; and *the glands of Peyer appeared perfectly healthy.*

Scirrhus of the Pylorus, latent during life. — *Dr. Macdonald* related an autopsy, in which scirrhus of the stomach was unexpectedly found, the patient not having manifested during life the ordinary symptoms of that disease.

Mr. G. H. had for about two years been suffering under an affection of the stomach, which, as the symptoms indicated, was considered merely functional. The leading, in fact the only symptom of importance, was the occasional discharge from the stomach of a fluid that resembled the ordinary evacuation in pyrosis. This vomiting, or rather eructation, usually took place in the morning, two or three hours after eating a very light breakfast. Its most ready and certain check was a few raw oysters, and cayenne pepper. Once in a great while the same sort of eructation occurred during the latter part of the night, and was usually relieved by a pill or two of rhubarb and soda. After a hearty dinner the patient invariably felt perfectly well for the remainder of the day, and at no time during the progress of the malady did he experience acute pain, swelling in the epigastrium, tenderness, nausea, vomiting of dark coloured fluid, or any of the other symptoms characteristic of cancer of the stomach.

Every symptom of disease had several times been removed for weeks or months by bismuth, mustard seed, and other remedies commonly employed in disorders of the stomach. Though troubled with these symptoms, Mr. H. was never prevented from attending to business until some two or three months prior to his death, when on taking a warm bath one day, he accidentally discovered that he was considerably swollen. His physician immediately examined him, and found fluid in the cavity of the abdomen. The origin of this effusion was sought in the heart, liver, &c. but could not be traced to those organic changes that so often precede it. Every method of treatment that promised success was resorted to, but without permanent advantage. While sitting by the fire one morning as well as he had been in several weeks, he was suddenly seized with a feeling of sinking and prostration, and died in two hours.

Autopsy 24 hours after death.

General Appearance. Emaciation considerable, though not extreme; œdema of lower extremities; effusion into abdominal cavity evidently pretty large. The superficial vessels of the body unusually dark coloured and visible. Some parts of the surface, particularly about the nates and iliac region, studded with vesications containing a dark coloured sanious fluid.

Paracentesis abdominis was in the first place performed, and about two gallons of a darkish fluid, having an evident bilious tinge, were drawn off.

Abdomen. On opening this cavity, the two things that immediately arrested attention were the entire absence of omentum, and the remarkable sphacelus-like appearance of the *small intestines.* These were of a dark mottled colour between indigo and chocolate, which extended in a greater or less degree to every portion of this division of the intestinal tract. They were also glued together, and to the adjacent viscera, by coagulable lymph.

The *large intestines* were also changed in colour but not to the same degree, and adhering to all contiguous parts.

The *Peritoneum* and intestines were coated with coagulable lymph, mottled by dark coloured spots very much thickened, and sprinkled over with tuberculous looking bodies. The mucous coat, as far as examined, was normal in texture, but of a singular dark leaden hue, as if bruised by a blow or blackened by nitrate of silver.

Stomach. This viscus was strongly adherent to the arch of the colon, the pancreas and spleen, that in attempting to separate it, the cardiac extremity was lacerated. It was then opened, and afterwards removed from its situation by dissection. The stomach generally, and the pyloric extremity particularly, were very much thickened. The mucous membrane throughout was softened, with a dark coloured patch near the middle of the great curvature. The pyloric extremity was remarkably hypertrophied, but the most extraordinary morbid product, and in all probablility the source of all the symptoms and changes, was a large scirrhus ulcer seated near, but inferior and posterior to the pylorus. This ulcer was of an irregular oblong shape, nearly two inches in length by three-quarters of an inch in breadth — its edges very much elevated, thickened, and hardened. After the removal of the stomach from the body, an opening entirely through all the coats was discovered. This perforation was so rounded as to leave no doubt of its being the result of a morbid process, that it took place before death, and was the cause of the sudden prostration.

Kidneys rather large, but healthy in structure.

Liver pale and flaccid, but normal in structure.

Thorax. Two pints of fluid resembling thick prune juice were found in the left side of the chest; the posterior and inferior lobes of the right lung dark coloured and softened, resembling the appearance this viscus presents in the third stage of pneumonia.

Heart rather flabby, otherwise natural.

Urethro-rectal Fistula. Reported by Dr. Griscom.

In November 1837, I was consulted by Jos. Harrold, a butcher, aged about 27, for a disease of the rectum. The patient appeared of a lymphatic diathesis, and inanimate disposition. He stated that the disorder had troubled him for a long time, the symptoms being a frequent desire to discharge his fœces, which were generally very small in quantity, and frequently consisted entirely of pus. There was no pain of much consequence, and his general health was pretty good. On examination by the speculum, the mucous membrane did not present any marks of disease, if we except some slightly raised patches, somewhat resembling *urticaria* as it appears on the skin. No discolouration or ulceration, or any opening for the discharge of pus could be seen. A creasote injection, three or four times a day, was all that was prescribed, which produced little or no benefit, and the patient soon after left the city for Canada. In December 1839, about two years after, I again saw him, he having been married in the meantime and settled in New-York. He sent for me on account of an inflammatory swelling of the right testis, which I found very large and painful. The derangement of the rectum continued in the same state as before. The treatment of the inflammation consisted chiefly of leeches, and hot and cold applications alternately used. Upon the subsidence of the inflammation after an obstinate resistance, an abscess began to form in the scrotum, from which from one to two ounces of pus was artificially discharged. This testis then wasted nearly away. During the progress of this part of the case, the patient told me that he had frequently discharged fœces and gas through his penis, a statement which I doubted until the sight of the fœcal matter so passed removed any room for doubt. This unnatural viaduct had been established about six months; and this blowing off of his intestinal gas had now become of so frequent occurrence as no longer to attract his attention. I could not find that urine was ever discharged per anum. About three months from the subsidence of the attack of the right, the left testicle was seized in the same way; this however was relieved by tobàcco poultices. A second attack of the left testicle occurred, which resisted all applications, and a deep-seated abscess was the result. The lancet brought evidence of pus, but a free discharge of it could not be obtained, and the opening was left to heal; but instead of this, a fungus protruded through the incision, upon which the patient applied burnt alum, which caused its increase. An attempt was made to reduced it with caustic, but proved unsuccessful. The right spermatic cord was now much enlarged, and the patient having lost his virility had become exceedingly irritable and childish, and the case assumed a serious aspect. Upon consulting with Dr. Watson, we arrived at the conclusion that the disease, probably, had originated in the prostate gland, and spread thence to the rectum and scrotum ; the original cause of disease was probably a venereal taint. An effort was now made to examine the parts by the bougie and finger per anum, in the expectation of finding a recto-urethral fissure, but to our regret we were met by a positive refusal from the patient which no argument could overcome, and we were compelled to retire wholly from the case.

Congestion of the Kidneys. *Dr. Watson* reported the case of a sailor who entered the Hospital for retention of urine without stricture. On passing the catheter, no urine was found in the bladder ; high febrile excitement ensued, the bowels became tympanitic, and the patient died two days after admission. On *autopsy*, both kidneys were found enlarged, and studded in their external surface with numerous spots of coagula. Dr. W. had never met with a similar case.

Regular Meeting, April 18th, 1840. The President in the chair, 20 members present.

Fœcal Abscess. *Dr. Adams* reported the case of a boy 14 years of age, of delicate constitution, who came under his care on the 30th Sept. 1839, with a hard tumour on the left side of the abdomen, extending from the margin of the ribs, down to a level with the anterior superior spinous process of the ilium, and from half an inch to the left of the umbilicus back towards the margin of the ribs, being three and a half inches in its vertical diameter, and four and a half inches transversely, lobulated on its surface, very sensitive to the touch, and without fluctuation, or pulsation. His mother states, that the tumour was first perceived in the latter part of August, and was at that time an inch in each diameter, painful and hard : the boy has been in the habit of carrying heavy weights in a basket resting against his side ; never had a blow or injury over the part. Leeches were applied over the tumour, and with relief to the pain ; the use of hot spirituous fomentations gave him the most comfort. As the heat of the part was reduced down to the natural standard, with the hardness remaining the same, I blistered the tumour, and dressed the surface with Ung. Hyd. Potassæ, but without diminishing the hardness.

October 9th. Dr. A. C. Post saw him in consultation, and advised poultices made with bread, and decoction of Dat. Stramonium ; these gave great relief. Tumour softened ; when the patient coughs, the tumour bulges out to the size of an egg.

October 18th, feeling fluctuation at the point, I punctured the tumour.

About half a pint of very fœtid pus was discharged; his strength is nearly exhausted; ordered quinine and nourishing diet; the opening closed up on the fourth day after. He improved wonderfully after this time, and, with the exception of occasional attacks of colic until the middle of January, when he was attacked with enteritis, which was relieved after free depletion.

February 26th. Complained of pain in the left iliac region, with hardness; applied a blister over the part.

27th. Fluctuation being well marked, I again opened the tumour, and about an ounce of healthy pus flowed out. A probe can be passed upwards and outwards to the depth of three inches; kept a tent in the incision to prevent its healing.

March 1st. Found him sitting upon the close stool; saw thin fœcal matter pass the opening; when the patient made an effort at straining, the fœces would run down over his abdomen; no communication with the gut could be discovered by the probe, which passes in near the surface for three inches; fœcal matter of the same colour and consistence passed by the rectum.

On the 3d of March, Drs. Parker and Swett saw the patient; there was, at that time, no fœcal discharge; his pulse being feeble, ordered a grain of quinine every three hours during the day.

March 8th. The opening has closed; passes healthy fœces per anum.

June 24th. Has enjoyed tolerable health up to this time; the abscess was again opened this morning; about ℥ij. pus discharged.

July 10th. The abscess remains open, with occasional discharge; I saw fœces pass this morning. He became very feeble as the warm season advanced, with occasional diarrhœa, and gradually sinking, he expired.

Dr. Beales read the following case of *Spontaneous Gangrene.*

Mr. H. ætat 70. Has always enjoyed very good health, of a very active disposition, and lived freely but without excess. February 9th, 1840, I was called to see him in consultation with his attending physician. He has a soft corn on the outside of the small toe of the left foot, and on its inner side there was another; but its place is now occupied by a small foul ulcer that gives him exquisite pain which shoots up his leg and destroys his rest; there is a slight blush of inflammation extending a few lines in every direction around the ulcer, but the remainder of this toe, as well as all the others, are of a dead-white colour. Pulsation cannot be discovered in either tibial artery; the pulse at the wrist occasionally intermits, is rather small, and 96; tongue covered with brown fur, appetite good. He was ordered the following pills: ℞. Pulv. Gum. Camphor. et Ammon. Carbon. ää. gr. ij. Extract Opii gr. j. Mix. ter in die sumenda. Fomentations to the foot three or four times a day, consisting of a decoction of flaxseed in milk, holding in solution some powdered opium: and in the intervals, poultices made with crumbs of bread and the same decoction. Rest in an horizontal position; nourishing diet, with a little wine.

We considered the affection to be ossification of the arteries — and he was accordingly put upon the method of treatment so strongly advocated by Pott.

February 10th. He did not pass a very good night; there are in several places on the foot spots of inflammation spread irregularly over it; the pain is very severe, coming on in paroxysms.

A portion of stramonium ointment, mixed with Goulard's extract, to be smeared around the ulcer night and morning. The bowels to be kept free by the compound cathartic pill, to which he had been accustomed.

12th. Notwithstanding the quantity of opium, he scarcely obtained any rest. Nearly the whole of the foot is inflamed, and the ulcer is spreading. He is slightly feverish, tongue dry and furred, pulse quick, weak, and intermitting. Pulv. Ipecac. Co. gr. v. 4 tis. horis, alternating with the pills. Vapour bath of Decoct. Capit. Papav. to the foot three times daily, instead of the fomentations.

13th. Passed a wretched night, and is worse in every respect; foot is very much inflamed. Pulse feeble and wavering. Infus. Cinchon. Frig. ℥vj. Tinct. Cinchon. ℥ij. Mix. a wine-glassful every three hours. Continue local applications. A bottle of wine daily, and brandy and water occasionally.

14th. The appearance of the foot has rather improved, but the pain is excruciating. The pulse has recovered from its irregularity, and is now moderately good; his general state is better, and he is more cheerful.

15th. Has slept well, and been very comfortable since last visit; pulse is good, skin perspiring, foot easy.

16th. Did not pass a very good night; pulse is regular and about 80; tongue furred; foot appears much better, with the exception of the ulcer which has now surrounded the base of the toe.

17th. Has a very severe paroxysm of pain. Take three of the anodyne pills immediately. Ext. Belladonnæ ʒij. Mucilag. G. Acac. ℥ss. Mix. To be smeared over the toe and metatarsal bone when in much pain.

19th. Yesterday and to-day the excruciating pain has come on at precisely the same hour as before, and lasting two or three hours; the intermediate time, he is moderately comfortable and passes tolerable nights; he is, however, irritable and "nervous." Pulv. Morphiæ gr. j. Pulv. Sacchar. Alb. gr. v. to be sprinkled on the ulcer half an hour previous to the usual accession of the paroxysm. He is also to take fifty drops of the wine of Colchicum. Castorei gr. v. Ext. Assafœtid. gr. ij. Pulv. G. Camphor. gr. ij. Mix. ft. bolus in haust. Cinchonæ sumendus.

21st. The paroxysms of pain have very much diminished in violence, but the disease is making rapid advances; the ulceration is now evidently gangrenous, it is of a dark brown colour, but is not so "dry" as I have seen it in former cases; it has extended along the metatarsal bones of the little toe, and has also invaded the next toe; there is a kind of advanced guard of dark-coloured inflammation, extending about half an inch around the gangrene, while the remainder of the foot is of a lighter red, slightly swollen, and œdematous: he begins to complain very much of pain in the heel, but as yet there is no appearance of disease there. Apply dilute nitric acid to the edge of the slough daily. Continue other remedies.

29th. Since the last report, the disease has continued to advance slowly but steadily; it now occupies the two small toes with their metatarsal bones, and extends irregularly towards the inner side of the middle of the foot; it has put on the peculiar appearance of dry gangrene, all the parts affected, closely resembling a dried anatomical preparation; the fetor is very great; there is a blue spot on the heel; the pain has been getting more constant, and is almost intolerable. He has taken full doses of every preparation of opium combined with the other anodynes, as conium, belladonna, &c., the local applications have been varied in almost every possible manner; but those which seem most to soothe, are pledgets of lint wet with equal parts of acetate of opium, (black drop,) and Goulard's extract, and laid upon the skin, and over these carrot poultices wet with the same mixed with a portion of Labarraque's solution. He is completely delirious all the time, partly on account of the pain, and partly probably from the effects of the opium; he scarcely obtains any sleep — has full diet and continues the stimulants as before.

March 3d. Was attacked by violent diarrhœa, which produced a great exhaustion; the action of the bowels was however restrained by chalk mixture and starch injections; the anodynes, although in excessive doses, appearing to exert no beneficial influence whatever, in fact rather to excite than tranquillize him, we determined to try the endermic method. Accordingly a small blister about the size of a dollar was applied to the arm, and half a grain of morphine sprinkled upon the surface after the cuticle had been stripped off. The effect of this remedy was truly astonishing, he fell into a sound sleep within five minutes afterwards, and slept tranquilly for several hours; the same effect continued to be produced till within a few days of his death, it merely being necessary to renew the blister every four or five days; we were consequently enabled to suspend the use of all other anodynes; the effect on the sensorium was equally beneficial, as he became in general calm and collected, and was able to discourse with his family and friends in his natural manner.

8th. A deep line of ulceration surrounds the gangrened part, and for some days the disease has not spread in the slightest degree: there is scarcely any pain in the foot; his pulse is regular and moderately firm; he enjoys his food, and, in brief, his state is so much improved, that we began to entertain hope that the disease was arrested.

29th. For more than a fortnight he continued about the same as described in the last report; remaining quite comfortable whenever he took a full supply of food and stimulants, but occasionally he would refuse these for some hours, upon which the pulse would fall and intermit, and the pain would return. On this day, he was again attacked by diarrhœa, and although it was checked in a few hours by appropriate remedies, yet we had the mortification to observe two or three blue spots on the foot above the line of separation. The same pain returned at intervals, and from this time forth the pulse never fully recovered itself.

April 2d. The gangrene has enveloped nearly the whole foot, and is extending up the ancle, with considerable pain, which is, however, much moderated by the endermic application of the morphine. The local applications are sometimes the carrot poultices, as before stated, and sometimes poultices made with flaxseed meal and the grounds of stale beer, or port wine; he seems to experience relief by varying the applications every two or three days.

6th. Has been vomiting nearly all the night; a great change has taken place in his countenance and general appearance; is very low and feeble, pulse scarcely perceptible, abdomen tympanititic, the whole leg is considerably swollen and œdematous. Effervescing draughts, with a desert-spoonful of chloric ether every two hours; valerian injection, spirituous fomentations to the leg.

7th. Has completely rallied, and is now in about the same state as he was before the attack of yesterday.

10th. Again is attacked by nausea, and rejects nearly every thing; a slough is beginning to form on the nates; he is now delirious. From this time till his death, his symptoms gradually got worse; the slough on the nates extended rapidly over the sacrum. He had several violent convulsions — the vomitings continued, with profuse perspirations, and he finally sank on the 18th of April.

Dr. B. remarked that it was perhaps singular that there was no appearance of disease in the other leg, or in any other part of the body; the symptoms of the last few days were probably merely the result of the exhaustion of the disease. Although none of the local applications appeared to produce any decided effect on the part, yet nearly all soothed and relieved him for a day or two, when it became necessary to change them as general remedies. Both bark and opium were fairly tried, and they were both pushed to the very largest doses, and continued for weeks, apparently without exercising any beneficial influence over the disease. The soothing effect of the endermic method of exhibiting morphine is worthy of notice, and also, that he was decidedly worse whenever the quantity of food and diffusible stimulants was diminished. It is much to be regretted that no post-mortem examination could be obtained. At the time of his death, the gangrene had reached the calf of his leg.

Dr. Adams read a paper on the *Causes of sudden death during operations*, especially from the introduction of air into veins — including a statistical account of all the recorded cases of this accident both in Europe and this country, the nature of the operation, vessel wounded, &c.

Regular Meeting, May 16th, 1840.

Dr. Garrish reported a case of severe facial neuralgia, occurring in a lady after the extraction of a tooth, and attended with spasms of the muscles of the face. Carbonate of iron having failed, she took Fowler's solution, with partial benefit. Quinine was then administered in xxx gr. doses, as recommended by Dr. Geo. M'Clellan of Philadelphia, but without benefit. The infra orbital nerve was then divided, the pain ceased, and has not recurred in a period of three months.

Case of Chronic Diarrhœa successfully treated with nitrate of silver. — *Dr. Vandervoort* reported the following case:

Mrs. ———, aged 25 years, was confined with her first child about eight months since, and from too early exposure, as she supposes, caught cold, which brought on a looseness of the bowels. According to her own account, the discharges varied but little, if any, from their natural state, as regarded colour, but were less consistent and more frequent than they should have been. As she did not consider herself ill enough to call in medical aid, she, of her own accord, took several doses of castor oil, the operation of which usually afforded her some relief. Her diet at this time consisted of the ordinary food of the family. After the lapse of two months, finding that the disease continued and was gradually getting worse, I was requested to visit her. Upon examination I found the skin rather dry; pulse frequent and of moderate strength, countenance pale, tongue smooth, glazed and furrowed; the papillæ at the edges and tip elevated and of a rosy redness, and here and there spots of superficial ulceration. The thirst was moderate; at times her throat was sore and there was a good deal of burning in the œsophagus, pain and tenderness in the epigastrium, even when moderate pressure was made, and also in the bowels. The stools were frequent, varying from four to eight or more per diem; for the most part they were faintly tinged with bile, and of the consistence of gruel, were passed at short notice, and in general not preceded by actual pain, but by a feeling of fulness or distension.

The case appearing to be one of irritation of the mucous membrane of the stomach, together with ulceration in the course of the intestinal tube, the patient was enjoined the strictest antiphlogistic regimen, being limited to boiled rice and soda crackers boiled in milk, with rice or barley water for drink in limited quantities. The child was taken from the breast in a few days and weaned. One of the following pills was given three times a day. ℞. Sulphat. Cupri gr. $\frac{1}{8}$, Pulv. Opii gr. $\frac{1}{3}$; they were taken several days without seeming to produce any benefit, and as they occasioned considerable nausea, they were discontinued, and nitrate of silver substituted. I was induced to try this remedy from its known power in arresting internal inflammations, controlling diseased action and allaying inordinate irritation. The patient began with gr. $\frac{1}{6}$, P. Opii gr. $\frac{1}{3}$, three times a day. Absolute rest and warm clothing were directed. In the course of three or four days she began to mend, the discharges became less frequent, and the epigastric pain and soreness of tongue were sensibly diminished. The dose of the medicine was gradually increased to $\frac{1}{4}$, $\frac{1}{3}$, and even $\frac{1}{2}$ gr. thrice daily, and were continued several successive weeks, the disease manifestly yielding to the remedy.

Suspecting that its protracted use might occasion some discolouration of the skin, an effect which we think must very seldom occur, it was at the end of about three weeks omitted; the disease too, at this time, had become stationary. Balsam copaibæ, in doses of gtt. xx, with half a teaspoonful of paragoric was now given three times a day, and an irritating plaster applied over the epigastric region. Whilst taking the balsam, she experienced a severe relapse of the disease; it was at once stopped, and nitric acid in small doses and Tr. Opii substituted. No benefit resulted from this course of treatment; her tongue became exceedingly sore, and the burning in the œsophagus increased; the bowels too were very loose. She was again put upon the nitrate of silver, and in less than three days a most decided change for the better took place; the stools became less frequent, and the soreness of the tongue and burning sensation in the œsophagus greatly lessened.

With the exception of one week, the treatment of the case with the nitrate of silver was constantly kept up for about two months, when she was so much better, that several days were allowed to intervene without her taking any medicine. At the end of 10 or 12 weeks, the tongue had returned to its healthy state, and the bowels became quite natural.

When I first saw this patient, whose constitution seemed to be very feeble, and with a strong predisposition to pulmonary disease, as was manifested during her illness, I felt some apprehensions as to the result. Belonging to the poorer class of society, and consequently deprived of the comforts and luxuries of those who occupy a less humble sphere, she constantly laboured under circumstances the most unfavourable to her recovery. But her strict observance of the prescribed diet and a careful attention in taking her medicine, aided greatly in bringing the case to a successful close.

Dr. E. Dixon remarked that he had lately treated 4 cases of *Menorrhagia* successfully, with the secale cornutum, in doses of 5 grs. every 3 hours.

Dr. Bulkley added his testimony in favour of this practice in menorrhagia, as well as in cases of severe flooding—in his cases the remedy produced intermittent pulse, and dilated pupils.

Thymic Asthma. Dr. Swett presented to the Society a preparation of enlarged thymus, with the history of the case, as furnished him by the attending physician, Dr. W. C. Roberts.

The case of the child from whom the thymus gland which I gave you was taken, is one of peculiar interest, inasmuch as she had laboured, almost from birth, under repeated paroxysms of true thymic asthma, and yet died with the symptoms of inflammatory excitement, which has formed the exception to the common termination, in the cases seen by Dr. Clements and myself. It was 19 months and 7 days old, and at the time of its death, healthy and fat. When about one week old, she one day gave a convulsive start, seemed to be choking, and to be quite gone. In a short time she gasped and recovered, but continued "to strangle," as her mother expresses it, for a half an hour afterwards. A fortnight afterwards she was similarly attacked; it appeared, (I preserve the language of the mother as much as possible,) as if something was choking her; the deliquium was complete, and she was supposed to be dead; having been bathed with vinegar, she again came to, but continued "to strangle" for half an hour, when she was as well as ever. At four months of age she was again attacked by the strangling, her eyes seemed starting from her head, but deliquium did not occur. Last fall, she had four attacks of strangling in one week, and was leeched. Off and on, ever since, she has had shortness and catching of breath; but no regular paroxysm until last Sunday.

The mother related the following additional particulars. From birth she never could lie on her stomach, owing to its effect on her breath. She had a habit of keeping her mouth open a good deal, on some days more than on others. She frequently retched, which efforts were supposed by the friends to arise from the ascent of worms to the throat: this was particularly observable during the first week. She had never walked, but merely stood erect by a chair; creeping fast put her out of breath, and made her strangle; laughing nearly killed her, put her in pain, and caused hiccup dreadfully. The mother has known her, after a little exertion, lie down on the floor and pant as if tired to death. When she had a little cold, she had more strangling than at other times. The action of the heart never attracted her attention.

The fit came on, after playfulness, one Sunday evening, at 10, P.M. The child started, her eyes turned up, and she swooned away. She continued merely breathing for near an hour. While in the fit she merely sobbed; when out of it, began as usual to strangle. Violent fever set in afterwards. When I saw her, about noon next day, she was lying quietly in her cradle, breathing high, head and belly hot, and pulse frequent, but nothing very remarkable in her appearance. Not knowing any thing about her previous attacks, I supposed the convulsions to have been cerebral. She had been a good deal vomited and purged by a powder obtained from an apothecary the night before. As the respiration was hurried and sonorous, and the belly tender and hot, and I did know from which point the irritation chiefly issued, I leeched both, and applied subsequently, a blister to the chest, which did not rise. The belly I fomented, and confined myself to the administration of demulcents. At S, P.M. the pulse was insensible, the respiration 100, laboured and groaning, the look anxious, and when raised up she seemed much distressed; she could not swallow. She died easily about 10, being observed just before to protrude and "quiver" her tongue very much.

The mother of this child lost another aged 14 months, in a manner even more sudden. It always had the same shortness of breath, and acted the same as this one, was also unable to walk: it had two attacks of asphyxia. The mother having gone into the yard, left the child on the floor playing with the cat. Before she returned, it was dead. She also lost a third in the same manner; it was 19 months old. It was backward in walking; also, had a wheezing all its life; had in all three spasms, surviving the third seven hours.

A fourth died of convulsions at seven weeks.

Post-mortem Examination revealed that the bronchial tubes were the seat of very considerable inflammation, and that pneumonia to a very trifling extent, existed in the lower portion of one lung. The bronchial glands were also enlarged and congested, of a bright red colour internally. The *thymus gland* was found to be very much hypertrophied, still preserving its natural colour, consistence, and texture. It was pyriform in shape, and composed of three distinct lobes. It was attached by loose cellular tissue at its smaller extremity to the anterior surface of the trachea, commencing half an inch below the origin of this tube, and below in the same manner to the pericardium, descending at one point to within seven lines of the diaphragm; thus covering the great vessels and about one-half of the anterior surface of the enlarged heart. Its length was three inches six lines, (Fr.) breadth two inches; greatest thickness, which was directly over the great vessels, six lines. The phrenic nerves were not included in the tumour, but passed laterally by it; enlarged bronchial glands, however, lay in direct contact with these nerves on each side about opposite the bifurcation of the trachea; the nerves appeared natural.

The heart contained no blood, but an old polypus of considerable size, was found in the right auricle. This organ was considerably enlarged, principally by hypertrophy of the left ventricle. Length of heart one inch seven lines, breadth two inches two lines, thickness of walls of left ventricle 5. 6. 6 lines; it was not dilated. Other portions of the heart nearly natural; pericardium healthy.

Dr. S. remarked that Thymic Asthma, so far as it had been yet observed, presents two varieties — sometimes, assuming the character of spasmodic croup, the patient being attacked with sudden paroxysms of strangulation, which may either subside in a few moments, or suddenly destroy life — at other times, operating as a constant source of obstruction to the heart and great vessels, it rapidly causes death on the supervention of a slight pneumonia or bronchitis.

Regular Meeting, May 30th, 1840.

Sudden death from an emetic — Serous Apoplexy — Dr. Clark reported the following remarkable case:

An Irish servant girl, 20 years of age, of extremely plethoric habit, had been subject to attacks of headache, sometimes of momentary vertigo, occurring at irregular intervals, usually in the morning, attended with slight hysterical symptoms, and abating after two or three hours, leaving her in ordinary health. Her health was otherwise good, and the menstrual functions regular. She had repeatedly taken professional advice, and had been sometimes bled. Sometimes had taken emetic and cathartic medicines.

On Wednesday, April 22d, she suffered for two hours in the morning with headache, and on Thursday, though she had been well since the morning of the previous day, determined without advice to take an emetic. She purchased six grains of tart. emetic which was to be taken in five doses, one every 15 minutes, till it produced vomiting. She took the first dose, (probably but little more than a grain,) at 10 o'clock P. M. and 15 minutes after, a second. The remaining three-fifths of the six grains were not taken. She vomited profusely, and drank an enormous quantity of warm water, a pint or more at a time. In this way she alternately drank and vomited for two hours. The quantity of fluid rejected *exceeded a pailful.* Toward the end of two hours the girls' sister, who was attending her, observed that she seemed to feel tired, and after vomiting fell back and appeared to doze, that she was disinclined to talk. Near half past 12, she thinks, the sister went to the bedside, having left her now to herself 15 or 20 minutes, to urge the drinking of more water, but the over vomited girl neither spoke or moved, she could not be roused.

The sister supposed she had fainted, and waited a few minutes for her to recover. The sister reports that the face was very red. At length the family were alarmed and Dr. Washington was sent for. The doctor found her dead. Her lips were purplish but no marked congestion of the face was observed by lamplight. At eight o'clock on Friday, the coroner sent for Dr. C. to make a post-mortem examination. He desired that Dr. Washington might be sent for also, but on account of the resistance of the poor girls' friends the autopsy was deferred till the succeeding day at noon.

Antopsy 36 hours after death, the weather being extremely warm for the season. — The face, chest, and arms, which when Dr. C. first saw the body, eight hours after death, were extremely congested, of a dark red colour, were now of a dark purple, and considerably swollen. A blood-coloured fluid mingled with air bubbled out of the nose and had flowed down into the coffin. The sub-cutaneous adipose layer on the abdomen and chest, was three-quarters of an inch thick, and on the latter as on the neck, &c., it contained countless little bubbles of gas, and was ecchymosed in all its thickness.

Abdomen. Tympanitic, (air in the stomach and intestines, and in the peritoneal cavity,) post-mortem pneumo-thorax. Decomposition was already advancing.

Head. Scalp congested and bled freely; arachnoid on the upper and lateral portions of the brain *dry;* vessels of the pia mater small and almost empty. As the brain was removed, less than the usual quantity of serum was found at the base. The membranes were pushed out between the optic nerves by fluid, so as to appear like an hydated cyst, half embedded in the brain. The ventricles were so distended, that when a slight scratch had been made in the length of the corpus callosum, the contained fluid spouted upward to the height of several inches. The fluid was transparent, or was slightly turbid. All the cavities were much distended. Nothing remarkable was discovered in the choroid plexus or other vessels of the cavities, and there was no where, within or about the brain, any trace of sanguineous effusion.

The *pleuritic cavities* contained a small quantity of bloody serum.

The lungs were somewhat congested, the right more than the left.

The heart was rather large, healthy, *entirely empty* of blood and *firmly contracted.* The vena cava descendens contained blood.

Stomach (distended with gas,) contained no fluid or solid matter, and appeared healthy; intestines also healthy.

The *uterus* and its appendages appeared to be natural, except that there was an hydatid tumour as large as a walnut, on the side of the left fallopian tube.

The cause of death in this case Dr. C. believes to have been a determination of blood to the head, in the act of vomiting; congestion, and effusion of serum, or *serous apoplexy.* Dr. Washington is inclined to the opinion that sanguineous congestion was the cause of death, and that the serum found in the ventricles, was wholly, or in part, a post-mortem product.

Dr. C. also read a Quarterly Essay, on a New Mode of ascertaining the dimensions, form, and condition of internal organs, by auscultatory percussion.

Regular Meeting, September 5th.

Bloody Tumour of the right Ovarium .Reported by *Dr. Griscom.*

August 1st, 1840, I was called hastily to see Mrs. J. D. H. 273 East Broadway, about 7, A. M. She had risen as usual, in health and strength, had made up bread for the family, and sat down to the breakfast table, when on a sudden she was attacked with intensely severe pain in the abdomen, and about the pubis, accompanied with a great degree of prostration. When I first saw her, which was about 20 minutes after the attack, I found her nearly pulseless at the wrist, with the feet and hands cold. Upon attempting to press the abdomen, the excessive pain prevented; the sensitiveness appeared to reside in the skin alone, and it would not bear the least touch of the finger; it extended above the umbilicus, and involved both alæ of the pelvis, and the pubic region. This symptom suggested spinal irritation. The vertebræ, on examination, showed some tenderness, and there was a decided connection between the spinal tenderness and that of the anterior surface. Further than this, no satisfactory diagnosis could be made. She had been menstruating a day or two, but it had ceased suddenly. The patient, notwithstanding the alarming prostration, was entirely sensible. When about preparing to administer some counter irritant applications to the spine, the family physician, Dr. D. Atkins, came in. He, upon examining the uterus per vaginam, and finding the same tenderness of the os tincæ as of the abdominal surface, concluded the disease to be one, of which she had had one or more attack on previous occasions, viz *metritis*. He directed leeches to the vagina, as high up as possible, and I then, taking my leave, saw no more of the case during life. She died at half past 6, on the afternoon of the next day, 36 hours after the first attack, and I assisted at the autopsia at 6 the next morning.

The further history of the case, as obtained from the attending physician, was to this effect: Soon after I left him, on observing the case more closely, he changed his mind as to the disease of the uterus, and stated the appearances to be such as might proceed from a rupture of an abscess, or an ulceration in some part of the intestinal canal, through its coats, whereby the fœcal contents would be discharged into the peritoneal cavity, and produce high inflammation of that membrane. No tumefaction was discoverable in the abdomen, and no symptom of inflammation except the sensitiveness of skin. He directed the leeches to be removed from the vagina, and gave the patient an opiate in the form of black drop. In about three hours the pain subsided, and under the continued administration of opium and stimuli of various kinds, the patient lived till the time stated.

On *post-mortem examination*, upon opening the abdominal cavity, a large quantity of fluid and coagulated blood, amounting when removed to nearly three quarts, was the first thing noticed. The stomach, liver, intestines, &c. presented a healthy and blanched aspect, without the slightest trace of inflammatory action; the only things unusual about them being an abnormal position of the colon, which was thrust high up in the abdomen, against the diaphragm, in front of the liver, and a contraction of the rectum to about one-third its proper size, commencing about three inches from the anus, and extending about six inches in length. After carefully removing all the blood by the sponge, the only diseased appearance that could be found was an enlargement and discolouration of the ovary. This was supposed to have been connected with the several attacks of uterine derangement, which she had had at intervals of some months. Passing it by for the present without a minute examination, we endeavoured to discover the source of the hemorrhage, but no rupture or unnatural opening of any kind could be found. The thoracic viscera, like those of the abdomen, were remarkably healthy. Failing to find any vent for the blood, we turned again to the diseased ovary, and upon turning it over, the source of the bleeding was at once discovered, by the protrusion from a small orifice on its posterior surface, of a string of a coagulum. The ovary was as large as a hen's egg, and had the appearance of a bag of thin membrane filled with dark blood; it was of a dark purple colour. Extending the opening which we found, and laying open the whole organ, it presented a large cavity filled with coagulum. The natural structure of the ovary seemed to be entirely broken down, or dissolved away, so that no trace of it was discoverable, its place being occupied by the coagulum. The blood vessels leading into it could not be seen. The passage of blood from the ovary into the abdominal cavity having been through a small opening, and the cavity filled with clotted blood, must have been slow; hence the long continuance of life after the first attack.

The left ovary and uterus appeared entirely healthy. The internal surface of the latter organ was coated with a thin layer of flocculent looking coagulum, of a dark red colour, probably the product of the menstrual action. Corpora lutea were seen in the left ovary. The lady was 39 years of age, and the mother of several children.

The excessive pain of the abdominal parietes and of the uterus, remains unaccounted for.

Sub-clavian Aneurism; Sir Philip Crampton's new Aneurismal Needle. — The Secretary read the following communication from Dr. Hamilton of Dublin, corresponding member of the Society:

Robert Count, ætat 41, an Englishman, huntsman to Sir James Power, presented himself to Sir Philip Crampton, December 10th, 1839, complaining of intense pain in the right arm, and a pulsating tumour under the right clavicle. He attributed these symptoms to the injury he received in a fall he got four weeks ago, in which his horse rolled over him. Immediately on rising from the ground he again mounted, and as the accident occurred on drawing the first cover, he rode the whole of the day, suffering intensely all the time. He concealed his ailment as long as he could, and went out four times during the ensuing week, notwithstanding the pain he endured. He was unable to make use of his arm, and kept it always in a sling. At last, overcome by pain, he had to give up, and sought for relief from fomentations, linaments, and leeches, but found none ; he was advised by his surgeon to come to Dublin. At this time his hand and arm began to swell : at present he complains chiefly of pain at the inside of the arm and about the elbow ; the forearm and hand are numb and as if dead, and occasionally affected with violent cramps, the hand is livid and œdematous.

There is a pulsating tumour, the size of half an orange, *under* the right clavicle, which causes that bone to be slightly elevated. Pressure on the sub-clavian artery against the first rib, causes all pulsation to cease in the tumour, and its size to decrease. The tumour was first discovered on the 7th instant, when it was very small, but it has gradually increased in size since then. Count is an uncommonly healthy looking man, of a sanguineous temperament, florid complexion, light hair, and not of a full habit. He states that till within the last six months he enjoyed uninterrupted good health, and that he lived pretty freely, taking three or four tumblers of punch every day, but that since an inflammatory attack in the chest, for which he was profusely salivated, (the only time he ever used mercury,) he has only occasionally taken a glass of wine.

There is a good deal of excitement of the arterial system, and distinct bruit de soufflet accompanies the first sound of the heart. The pulse at the wrist and the temperature of both limbs are the same. Functions natural.

After treatment for a few days with black drop and digitalis, the arterial excitement was subdued in some measure, pulse 84. Sir Philip Crampton sent him into the Meath Hospital, with the intention of tying the sub-clavian, immediately external to the scalenus ; but the day after admission, after having just said how well he felt, and how he had slept for three hours, and had had less pain, and appeared cheerful, he suddenly became insensible, and after gasping for a couple or three minutes, he expired at 10 o'clock, A. M. The post-mortem appearances revealed a state of parts, which showed how fortunate it was that the attempt to tie the artery had not been made.

Examination 24 hours after death.

When the clavicle was removed, the sub-clavian vein appeared greatly enlarged, and was very adherent to the artery. The artery presented a very diseased appearance, there being two fusiform enlargements of it, the first immediately external to the scalenus muscle; the second only separated from the former by less than half an inch of apparently healthy artery, was the larger, and extended to the end of the sub-clavian artery. These were not in reality perfect fusiform dilatations, but were in fact, part of the aneurismal sac, which arose from the upper and back part of the artery, beginning at the external edge of the scalenus. It was as large as an orange, the smaller fusiform tumour forming its lower part, but the larger one only, partly opening into it. It rested on the first and second ribs, and bulged into the cavity of the chest at the intercostal space. The pressure had bared the first rib of its periosteum, but so recently that no caries had taken place. It was irregular in shape, and fibrous within, and the opening from the artery into the aneurismal sac was not a hole, but a deficiency of the upper wall of the artery for a certain extent; part of the lower wall corresponding being thinned and dilated, as part of the sac. From the innominata to the aneurism the artery was rather thicker than natural, irregularly so, of a redder colour through all its coats; the inner coat red and unevenly nodulated. The axillary artery was healthy. The brachial plexus above the artery was expanded out on the sac.

The aorta was rather red and wrinkled internally, but not otherwise diseased.

The heart was very much enlarged, chiefly from hypertrophy of the left ventricle; no disease of the valves. The vena cava descendens was of unusual size. The blood, both in the veins and sac, was black and very fluid.

Lungs emphysematous.

A casual examination of the intestines showed no disease.

The head was not examined.

In this case the attempt to tie the sub-clavian artery must have been inevitably fatal. For, as the aneurismal dilatation began immediately external to the scalenus muscle, no room was left for the ligature, and in the effort to put it on, the point of the needle would have torn its way through the walls of the sac. Not long ago I was witness to such an occurrence. One of our best surgeons here, after several fruitless efforts to pass the ligature round the sub-clavian, while making a plunge with the needle, was suddenly alarmed by an excesive hemorrhage, which was restrained with much difficulty. After death, the aneurism was found to have become diffused and gone up behind the artery, and that the needle had torn into the sac in this situation. Tying the artery in its first stage, would have been no less unfavourable, from its diseased condition, and even were the results of putting a ligature round the innominata less discouraging, the state of the heart would have caused this case to be added to the other failures of the operation. As the head was not examined, it would, of course, be needless to speculate on the cause of the sudden death.

In Mr. Hamilton's communication, the Society was informed that Sir Philip Crampton was led by the foregoing case to the invention of a new aneurismal needle. One of these instruments was exhibited by Dr. Watson, who had been furnished with it by the kindness of Sir Philip, through Mr. Hamilton.

It consists of two pieces. The first, or needle proper, is formed after the model of the ordinary aneurismal needle of Abernethy, except that its curved extremity is somewhat broader. It is pierced near this extremity by a longitudinal slit, about four lines long, and rather more then half a line wide; and on each side of this by a small round hole, or eyes for the passage of the ligature. Proceeding from these two small holes, or eyes, the convex portion of the needle is marked by two longitudinal grooves, in which the ligature may play securely over this part.

The instrument is armed by passing one end of the ligature through each of these round holes, drawing the ligature transversely over the concave face of the slit, and allowing the two ends, which should be long enough to reach beyond the extremity of the handle, to play through the grooves on the convex portion.

When the needle is thus armed and passed beneath the artery; the second piece, which consists simply of a small blunt hook mounted on an ivory handle, is passed down through the slit in the needle, and made to hook up the loop of the ligature, as it crosses the slit.

This instrument is quite as simple as the aneurismal needle of Abernethy; and, when required for deep vessels, infinitely more convenient. In this country Abernethy's needle has long been superseded by the useful and ingenious instrument of Hartshorn and Parrish, or as it is familiarly called, the "American Needle." But this, consisting of several pieces, and requiring to be unscrewed while lying in the wound, is in no point of view superior to the new instrument of Sir Philip Crampton; and when the latter becomes sufficiently known, it will probably supersede all others now in use.

Aneurism of the left external iliac artery. — Reported by Dr. Post.

John Early, æt. 20, born in Ireland, blacksmith, accustomed to shoe horses, admitted August 15th, 1840, with a tumour above the left groin.

About 10 months before his admission he had gonorrhœa, which was partially relieved by medicines, but some discharge continued until about the first of August. About seven or eight months before his admission he had a chancre on the penis, and nine weeks before his admission, a small, circumscribed tumour, of the size of a large filbert, made its appearance in the left iliac region. He was conscious of pulsation in the tumour, but he suffered no pain or inconvenience from it. He applied to a physician, who regarded the disease as a syphilitic bubo, and gave him mercurial preparations which induced profuse salivation. After recovering in part from the effect of the mercury, he went into the country, and walked about 35 miles in one day; in consequence of which he felt much fatigued, and suffered considerable pain in the tumour and in the corresponding limb. This occurred three or four weeks before his admission into the hospital. He afterwards attempted to work, but was obliged to relinquish it, on account of a sense of burning in the feet and cramps of the legs, which symptoms continued to be troublesome for several days, and were then relieved by the application of cold water to the feet. The tumour then began to increase in size, and it became more painful. He applied a poultice with powdered camphor sprinkled over the surface, by which he was partially relieved, but the pain soon returned with increased violence. About five days before his admission, leeches were applied without any benefit. At the time of his reception into the hospital, the tumour was about four inches in diameter, flattened, and hard. On placing the hand over the tumour, pulsation was felt, and on applying the stethoscope, a distinct bellows sound was heard. Bowels constipated.

18th. A consultation of the surgeons was held, and the tumour examined with great care. The conclusion to which each one of the surgeons came, was, that there was not evidence to establish the aneurysmal character of the tumour, and that it was impossible to form an accurate diagnosis of its nature. Anodyne and emollient poultices and leeches were applied, and cathartic medicines administered. Opiates were also given freely, to relieve the pain.

23d. The tumour continues to increase and is tender when touched; severe pains come on in paroxysms, extending down the limb.

24th. On examining the tumour I thought that I felt deep fluctuation; Dr. Buck, who was present, agreed with me as to the sensation; I introduced a lancet into the tumour to the depth of an inch, but no fluid escaped. I then made an explorative incision through the integument covering the tumour, and cautiously dissected the subjacent parts layer by layer, until I made an opening sufficiently large to admit the extremity of my finger into a cavity, in which I found coagulated blood, but which I did not deem it prudent further to explore. Lint was applied to the wound, and over it a compress. During the following night there was a sudden gush of arterial blood from the wound, amounting to a pint or more, as estimated by the house-surgeon. The hemorrhage was arrested by means of a compress, secured by an appropriate bandage.

25th. The tumour is more prominent, and tender to the touch. The patient complains of very severe pains in the leg; he feels much exhausted. Pulse 120, and feeble. A consultation of the surgeons was called, and it was determined to apply a ligature to the common iliac artery.

26th. The patient did not make up his mind to submit to the operation until to-day. At one P. M. he was placed upon the operating table, and on a careful examination of the tumour, it was found to extend so high up, that all the surgeons were of the opinion it would be impracticable to expose the iliac artery, without opening the peritoneal cavity. I therefore made a vertical incision about six inches in length, through the abdominal parietes on the left side of the umbilicus. On opening the peritoneal cavity, the intestines gushed out with considerable force, in consequence of the struggles and cries of the patient, who was extremely restless and intractable. The further progress of the operation was much embarrassed by the protrusion of the bowels. I passed my finger down to the bifurcation of the aorta, and thence along the left primitive iliac artery, whose pulsations I could distinctly feel; I also examined the tumour which was hard and resisting, without pulsation, and extended as high as the origin of the external iliac artery. With considerable difficulty I scratched through the peritoneum covering the primitive iliac artery with my finger nail, and introduced under the artery Sir Philip Crampton's aneurysmal needle, armed with a strong silken ligature. I then requested the other surgeons to feel the artery over the needle, and they satisfied themselves that no other vessel was included. I tied the ligature, and immediately the pulsation ceased in the artery below. The edges of the wound were brought together by sutures passed through the skin and muscles, and by adhesive plaster. The patient was put to bed, and directed to take a solution of sulphate of morphine to relieve his pain. Six P. M. Pain in the tumour and in the limb continue to be severe. Ordered sulphate of morphine to be given in repeated doses until it should relieve the pain.

27th, 10 A. M. Had some sleep during the night; pain greatly relieved. Has vomited several times this morning a slimy substance of a grass green colour. He has also occasional hiccup. Pulse 130 and feeble. Efforts were made to relieve the irritability of the stomach, but the vomiting became more frequent, and the patient died about 24 hours after the operation.

In reviewing the history of the above case, there are several circumstances which appear worthy of our attention.

1st. The difficulty in establishing the diagnosis of the disease. Pulsation and the bellows sound were perceptible in the tumour, but these might have been explained by the pressure of a tumour, not aneurysmal, upon the external iliac artery. The tumour was remarkably flat, not presenting the rotundity which is usually found in aneurysms. Another remarkable fact, and one which added greatly to the difficulty of the diagnosis, was the hardness of the tumour, and the impossibility of evacuating any part of its content by pressure, at so early a period after the commencement of the disease.

2d. The very rapid growth of the tumour, and the unusual severity of the pain which marked its progress. These circumstances, together with the cessation of the bellows sound, and of the pulsation, inclined me to the belief that the tumour was probably the result of an inflammatory engorgement beneath the iliac fascia.

3d. At the time when the explorative incision was made, the patient was greatly reduced, in consequence of the violent pains which he had endured, and which seemed likely to terminate his life, unless speedy relief could be given.

4th. The needle recently invented by Sir Philip Crampton for passing ligatures under deep-seated arteries, and which I used on this occasion, is an instrument admirably adapted to the purpose for which it was contrived, and I regard it as having decided advantages over every other aneurysmal needle with which I am acquainted.

5th. The death of the patient, occurring so speedily after the operation, was undoubtedly owing to exhaustion, occasioned by severe and long continued pain, together with the loss of blood following the explorative incision, and the superadded shock of the last operation. His feeble state of health, as he had not perfectly recovered from the effects of severe mercurial ptyalism, contributed to the fatal result. It is much to be regretted that no post-mortem examination could be made, as the family of the patient removed his body soon after death, and absolutely refused their consent to have it examined.

Statistics of Hernia. M. Malgaigne of Paris has investigated this subject in relation to sex, age, and population.

1st. Sex. At Salpétriére, a hospital devoted to old women, the proportion was 1 in 32; at Bicetre, a similar institution for old men, 1 in 18. At the Invalides, devoted to retired soldiers, the proportion is rather greater, being 1 in 16 or 17.

Among the people at large there is a considerable increase in the proportion of males, and a corresponding diminution in that of females. In England the proportion is as six to one ; but this difference is probably owing in part to the fact that females apply less readily to public institutions than males. In France this difference is by no means so great. Thus in the patients which applied at the Bureau Central des Hôpitaux for the purpose of obtaining trusses, the proportion was only four males to one female.

2d. Age. The following table will present a concise view of the results obtained by M. Malgaigne at the Bureau Central.

AGE.	1836.			1837.		
	Male.	Female.	Total.	Male.	Female.	Total.
From birth to one year.	48	7	55	30	8	38
1 to 2	16	7	23	29	7	36
2 years.	18	4	22	14	2	18
3 "	11	4	15	9	1	10
4 "	9	0	9	9	4	13
5 to 13	53	12	65	45	6	51
13 to 20	83	8	91	76	7	83
20 to 28	118	17	135	108	23	131
28 to 30	47	9	56	33	12	45
30 to 35	119	26	145	112	28	130
35 to 40	237	53	290	181	47	228
40 to 50	410	131	541	312	111	423
50 to 60	457	118	575	385	98	483
60 to 70	367	119	486	324	100	424
70 to 75	133	31	164	132	18	150
75 to 80	62	13	75	65	15	30
80 and over.	15	5	20	20	2	22

The French system of enlistment requires an exact census of the male population from 20 to 21 years of age. A general examination is made by surgeons appointed for that purpose ; and as hernia is a cause of exception from the service, it would seem probable that a pretty accurate estimate of the frequency of hernia at this age among males might be obtained. The results obtained from the examination of 754,875 subjects during six successive years, gives the following results :

1831 . . . . 1 in 30.98
1832 . . . . 1 in 34.05
1833 . . . . 1 in 29.95
1834 . . . . 1 in 31.49
1835 . . . . 1 in 32.30
1836 . . . . 1 in 29.34——1 in 32.

M. Malgaigne, assuming the above tables as the basis of his calculations, attempts to arrive at the proportion of hernias in the whole population estimated at ten millions. He makes it 1 in 13 for males, and 1 in 51 for females; and without distinction of sex, 1 in 20½.

The remarkable difference between the proportion for 21 years, and that for the whole male population, has led M. Malgaigne to apply the same calculations to ascertain the proportion for the whole male population at different ages. The following are the results, omitting the fractions:

From birth to 1 year	1 in 20	From 28 to 30 years	1 in 20
" 1 to 2 years	1 in 29	" 30 to 35 "	1 in 16
" 2 to 3 "	1 in 36	" 35 to 40 "	1 in 8
" 3 to 4 "	1 in 55	" 40 to 50 "	1 in 8
" 4 to 5 "	1 in 59	" 50 to 60 "	1 in 5
" 5 to 13 "	1 in 77	" 60 to 70 "	1 in 4
" 13 to 20 "	1 in 41	" 70 to 75 "	1 in 3
" 20 to 28 "	1 in 30	" 75 to 80 "	1 in 3

M. Malgaigne next attempts to show the proportion of hernias among the richer and poorer classes in Paris, making use of the conscription registry, and dividing the city by arrondissments into poor and rich. This is of course but an imperfect approximation to the truth. It gives for those examined, and between 20 and 21 years of course, for the poorer arrondissments, 1 in 28; for the richer, 1 in 37 or 38.

Annales d'Hygiène.

Recto-vaginal Fistula. — *Cured.* By Dr. J. R. Barton.

The patient was an unmarried lady ætat 22, who experienced the symptoms of an acute abscess in the region of the rectum and vagina in 1835. It formed and broke on one side, and was lanced on the other. After a copious discharge of its contents, one of the openings healed, whilst the other became fistulous, and continued so for four years, in spite of general and local treatment, including injections, tents, setons, caustic, incisions, and excisions.

The fistula commenced about three-quarters of an inch within the labium of the right side, thence passing by a very irregular course up the pelvis, and inclining toward the rectum, into which it finally opened three and a half or four inches from its inferior aperture in the vagina.

As this sinus could not be treated by a seton, or by the operation for fistula in ano, an operation adapted to the peculiar case was performed. A fine tent was inserted for a few days to dilate the sinus, and render its course less tortuous. A seton was then introduced with an eyed probe, into the sinus per vaginam; thence passed through its whole extent until it had penetrated the rectum by the orifice in that cavity. It was then brought down and out per anum, the two ends being loosely tied together. After a few days, the loop was opened, and the end of the seton passing out of the vagina, was put through the eye of a probe which was previously crooked at the other end. This probe was then inserted into the orifice in the vagina; thence about an inch and a half up the sinus, then its point directed towards the perineum, just exterior to the sphincter ani muscle. Here a small but somewhat deep incision was made, and the probe pushed through it; bringing along with it the end of the seton which had been doubled upon itself.

The seton now instead of passing out of the vagina, as at first after coming down from the bowel, descended through the new channel which I had made for it. The ends lying almost side by side were now tied together, thus forming a loop, in which were included the parts between the outer surface of the sphincter ani muscle and the rectum. The seton was subsequently drawn and twisted tighter and tighter from time to time, in order to cause its ulceration through the included parts, as we do in common fistula in ano when operating by the ligature or wire. So soon as by these means the new and direct channel was formed, and had attained a larger size than that penetrating the vagina, the discharges from the rectum deserted that portion of the route which led to the vagina, and took the course of the seton. Long before the seton had made its way out by ulceration, the vaginal portion of the sinus had healed, and the integrity of this organ had been restored. I had only to treat the case now as a simple fistula in ano; tightening the ligature every day or two, and finally dividing the slight intervening portion by a slight clip of the scissors. The parts healed in a few days. Nearly a year after the operation, the cure had been permanent.

Amer. Jour. Med. Sciences.

New mode of treating Retroversion of the Uterus.—Mr. Halpin of Cavan, has published a case of retroversion of the uterus, which, after resisting all the ordinary modes of treatment, was finally cured by the following expedient, A small recent bladder was attached to the tube of a stomach pump, with an air-tight piston, and having immersed it for a few moments in warm water, the operator introduced it empty into the vagina, between the fundus of the uterus and the rectum. Retaining it within the vagina by the hands held firmly across its orifice, an assistant slowly and steadily inflated it. After a time the patient complained of a sense of tension or bursting, but no pain. The introduction of the air was then stopped, allowing what was already admitted to keep up a steady, equal, well-directed pressure on the tumour. After the expiration of five minutes, on more air being thrown up in the bladder, the patient exclaimed slowly, " Oh, now your are forcing something up to my stomach." Retaining the bladder some time longer in its situation, the air was permitted to escape ; and on introducing the finger, the tumour was no longer in the pelvis, but the os uteri lay within reach of the finger, pointing downwards and backwards. *Dub. Jour.*

Diseases of the brain dependent on Diseases of the Heart. By Robert Law, M. D.

The following conclusions are derived by Dr. Law from his examination of this subject:

1st. The pathology of the brain is, in many instances, intimately connected with, and dependent upon, pathology of the heart.

2nd. To limit the pathological relation existing between these two important organs to apoplexy, the result of hypertrophy of the left ventricle of the heart, is to narrow it much within its true limits.

3d. Ramollissement of the brain occurs in connexion with diseases of the heart, whose effect is either directly or indirectly to diminish the flow of blood to the head.

4th. This cerebral lesion may be connected with either disease of the aortic or mitral valve.

5th. Hypertrophy of the left ventricle of the heart, in order to produce apoplexy, must depend upon some impediment to the circulation, placed at a greater distance from the heart than the origin of the vessels which convey the blood to the brain.

6th. When ramollissement of the brain occurs, in connexion with an imperfect or patulous condition of aortic valves, the close analogy that we trace between the physical signs and constitutional symptoms of this lesion and hæmorrhage, as well as the results of treatment, render it very improbable that the disease of the brain is the result of too much blood driven to it, and with undue force.

7th. When ramollissement of the brain occurs, in connection with disease of the mitral valve, the state of the pulse, which, as a diagnostic mark of this lesion, is habitually small, precludes the idea that the cerebral lesion is produced under the usual conditions of inflammation.

8th. While ramollissement of the brain occurs as a result of inflammation, hyperemia, &c., it occurs also under diametrically opposite circumstances.

9th. To confound such opposite modifications of disease, and to apply to them the same treatment, must necessarily lead to the most mischievous results.

10th. The circumstances under which we have seen ramollissement of the brain to take place, seem to identify it with gangrene, or death of a part consequent upon a diminution of its due supply of blood.

Dub. Jour.

Observations on Empyema. By GEORGE GREENE, M. D.

Dr. Greene thus briefly enumerates the conclusions which a consideration of his facts and observations suggests.

1. That in cases of effusion into the pleural cavity a copious and purulent expectoration is a frequent accompaniment, depending, in some instances, on a fistulous communication established between the seat of the collection and a bronchial tube, and that when such a communication has taken place, it may be recognized by well-known and characteristic signs.

2. But that, in other instances, the expectoration may be equally copious and purulent, while all the physical signs of such a communication are absent, and where, consequently, the symptom in question cannot be referred to such a lesion.

3. That an expectoration of a similar character will also occur in some cases of empyema, uncomplicated with tubercular excavations or with abcesses, the result of pneumonia, as can be proved — first, from the absence of the physical signs indicative of these lesions ; and, secondly, by a consideration of the following phenomena :

4. That remarkable changes take place in the expectoration as soon as a free external outlet is afforded for the matter : it will be then observed to have rapidly diminished in quantity, and to have changed from the puriform to the mucous character, and, in some instances, to have lost its fœtor.

5. That if the external opening becomes closed the expectoration will again become copious, and will reassume its puriform character and fœtor.

6. That as these phenomena cannot be accounted for, on the supposition that the expectorated matter is the product of bronchitis, or that it is received into the bronchial tubes, by their communication with purulent deposits in the lung, or with the collection in the pleural sac, an explanation must be sought for in some general law which establishes a reciprocity of morbid actions between serous and mucous surfaces.

7. The many examples of the force of this law are afforded in what have been termed " critical evacuations ;" as, for instance, where morbid collections in the peritoneum have been suddenly transferred to the intestinal mucous surface, independently of the processes of adhesive inflammation and ulceration ; and that there is no reason, *a priori*, why

this law should not occasionally obtain between the respiratory, serous and mucous membrances.

8. That a recollection of this law may be of practical importance, because in cases where the physical signs of cavities in the lung are obscure, we should not allow our opinion to be biassed in favour of these lesions, by taking the expectoration, however copious and purulent, into consideration, inasmuch as it may be the result of the general law just referred to, and if so, should not form a ground of objection to the operation of paracentesis.

9. That even when the physical signs of a cavity appear to be better marked, they may still be deceptive, owing, first, to the great accumulation of matter in the bronchial tubes; and, secondly, to the compressed condition of the lung around them, whereby the natural phenomena of the voice and respiration are so modified, that, when combined with the loud, gurgling râle in the tubes, they may be mistaken for the signs of a cavity.

10. That these fallacious signs will be found in greatest intensity at the root of the lung, and will disappear more or less quickly after the operation, in proportion to the power of expansion possessed by the lung, when the fluid in the pleura, which is the cause of the compression, is removed.

11. That one of the grounds for diagnosis, in such cases, is the proximity of the signs to the root of the lungs: if they diminish in intensity from this situation, they will depend on the causes just assigned; if on the contrary, they are found at the apex of the lung, or any part distant from the root, they may either depend on cavities, or on an enlarged bronchial tube.—*Ibid.*

Typhoid fever in Children. By H. Roger, M. D.

[The important facts contained in this memoir, are derived from an analysis of numerous cases of typhoid fever, observed by M. M. Taupin, Rilliet, and the author, in the Children's Hospital Paris. The subject is the more worthy of attention, as the pathology of fever is now engaging so extensively the attention of the profession, and as very little has been published on the disease as it occurs in children. We shall observe that for Paris, it is essentially the same disease described by Louis and Chomel, presenting however, as might be expected, some peculiarities dependent upon age.]

The *morbid anatomy* of this fever, did not differ materially from that of the fever of adults. There were the same primary and secondary lesions, viz. swelling, softening, and ulceration of Peyer's glands, enlargement of the isolated glands, of those of the mesentery of the spleen, &c.

Two circumstances only, are worthy of note in this point of view. The comparative rarity of the *hard plates* (plaques dures) caused by a deposit of yellowish matter under the mucous membrane of Peyer's glands, and the more tardy developement of ulceration in these glands. Thus in M. Chomel's cases, ulceration commonly commenced as early as the 8th, 12th, 15th day. While in four cases of M. Rilliet, in which the patients died on the 15th, 19th, 20th, and 21st day, and in two others, which died on the 19th and 23d day, the glands were not yet ulcerated, though inflamed.

This disease would not appear to be equally common at all periods of childhood. Children are not admitted into this hospital after the age of fifteen years. Those of fourteen years of age, were the most frequent sufferers, forty-seven in two hundred and ten cases; and from this there is a gradual decline in frequency, until the second year — the earliest period of admission. Whether children younger than this, suffer from the disease, is yet doubtful. M. Valleix, in his recent work on diseases of infants, has given no cases. Acclimation appears to exert the same influence on children, as on adults, for two thirds of the cases had recently arrived at Paris; and M. Louis remarks, in relation to adults, that he has seen no case in persons who have lived more than two years in that city. Neither worms, or dentition appeared to exert any influence over the developement of the disease — a few cases seemed to favour the idea of contagion, but these were contrary to the general rule.

The *symptoms* of the disease are thus concisely given by M. Roger. Attack often sudden; vomiting; marked prostration and drowsiness; headache, with intense fever, and dry skin. At other times, loss of appetite, constipation or diarrhœa, wandering pains, and lassitude for several days; rarely epistaxis. The child is dull and sluggish, and loses its fondness for play; is sleepless and agitated at night, and cries on awaking.

In which ever way the disease may have commenced, its true nature soon becomes evident. The pulse is frequent, 120, 150, and somewhat full; the skin is dry, and burning hot; the thirst is ardent, and the disgust for food complete. The tongue is covered with a dirty, viscid coat, and red at the edges and tip; the gums sprinkled with small whitish pellicles, (false membrane.) The diarrhœa becomes more urgent, and there is pain in the abdomen, particularly in the right iliac region, with meteorism, gurgling on pressure, and still later, the lentil-shaped, rose-coloured spots appear. The countenance, especially in the older children, wears an expression of stupor, which is characteristic. The debility increases, the intellect and the senses grow dull, or the drowsiness which existed before, becomes more marked. The respiration is accelerated, a dry cough is present, &c.

As the disease progresses, this condition of things becomes worse. The pulse is small and compressible ; the skin constantly of a pungent heat ; the tongue is dry, and covered, as also the teeth, lips, nostrils, with blackish crusts. Deglutition becomes difficult, drinks induce a convulsive cough, and are rejected by the nose. The stools are involuntary, the abdomen distended with air, and the spleen can be felt below the edge of the false ribs. The thoracic symptoms increase also in intensity ; the respiration becomes more laboured, the cough more urgent, and the voice more feeble and interrupted. At this period, the ataxic symptoms are most marked ; eschars form upon the sacrum, &c.

Death may occur in different ways, according to the character the disease assumes ; or, on the contrary, improvement may commence ; the fever diminishes, the skin grows less dry, the tongue becomes moist, the appetite returns, the diarrhœa abates, the meteorism and the abdominal pain subside. The cough becomes less urgent, and the expectoration more free ; the countenance improves, calmness and gaiety return to it ; the strength increases, and the child sits up and plays, until complete convalescence takes place.

Our author regards the prognosis of this disease, as more favourable, than in the case of adults. In one service, the mortality was one in five ; in another, one in ten ; in a third, one in twenty. In the two first, the purgative treatment was principally employed ; in the last, a mixed treatment, consisting of moderate anti-phlogistic means at first, was used. Our author is of opinion, however, that repeated bloodletting is not so well borne by children, as by adults, and that purgatives should also be administered with more caution, since they more easily excite inflammation in the intestinal canal, which is with them, a far more grave disease. —*Archives Gen. de Méd.*

Tic-douloureux from thickening of the dura mater about the fifth pair of nerves at their exit from the cranium. By Dr. Skae.

S. E., aged 60, a gentleman of slender make, in whose constitution the nervous bilious temperament seemed to predominate, was first affected in the spring of 1833 with symptoms of facial neuralgia, situated in the external branch of the opthalmic nerve of the left orbit, and speedily involving the whole temporal and frontal region of the left side. The pain was of the most excruciating kind, darting along the course of the supra-orbital and infra-orbital nerves, the inferior maxillary being but little affected till a late period of the disease. The paroxysms were most severe during the night; and, as in all cases of neuralgia, they were distinctly characterised by intervals of freedom from pain. Towards the termination of the disease, however, along with the usual symptoms of tic, there supervened a dry state of the affected nostril, and a complete insensibility to the stimulus of the most powerful sternutatories, as well as some degree of deadness over the cheek, and a sensation in the left side of the mouth and tongue as that which might be experienced by the presence of sand. On the occurrence of these symptoms, I of course, felt satisfied of the presence of organic disease in the course of the affected trunks, and the treatment was modified accordingly. The remedial measures which seemed to yield the greatest benefit were, stated attention to the digestive organs, by the exhibition of alterative aperients and light tonics; occasional small bleedings from the temporal region, followed by the application of blisters; and keeping up for a series of weeks a moderate discharge from the nape of the neck by means of an issue. Opium, conium, and belladonna yielded but slight and passive benefit. The system was also brought under the specific influence of mercury, but still with little benefit. The disease terminated fatally in February, 1834.

On opening the head, thirty-six hours after death, the upper surface of the brain was found natural, with the exception of slight venous turgescence; the base of the brain also presented no marked deviations from health. The most obvious structural change, however, presented itself in the left side of the base of the cranial cavity, and occupying that portion of it which is formed by the ala of the sphenoid bone, and comprising that space posterior to the sphenoidal fold of the dura mater, through which are transmitted the maxillary branches of the fifth pair, and partially involving the foramen lacerum orbitale. In this situation, the affected side seemed considerably elevated; so much so, indeed, as to destroy the symmetrical appearance of the middle region of the base of the cranium. On accurate examination, this was found to depend on very considerable thickening of the dura mater around the exits of these nerves and the foramen lacerum orbitale. There was also a slight effusion of serum in this region. The substance of the bone subjacent to the seat of the disease, and to which the morbid structure was firmly adherent, seemed itself entirely healthy. The three nervous trunks, as well as the Gasserian ganglion were carefully examined, but none of them presented any perceptible change from their normal state.

Ed. Med. and Surg. Jour.

Remedial effects of Galvanism, by staff-surgeon Pehtnikoff, of Bobruisk. — Joseph Fedoroff, a soldier, 30 years of age, after an attack of nervous fever was affected with distortion of the left cheek, paralysis of the left upper eyelid and amaurosis of the left eye. He had been in this condition three months when he came under the care of Mr. Pehtnikoff. The treatment was commenced with eight pair of plates two inches in diameter: the wire of the positive pole was applied to the left cheek and upper eyelid, and that of the negative pole was held in the moistened hand. It produced no obvious effect. When four pairs of plates were added a slight sensation was produced. The battery was now alternately opened and closed, by removing first the positive and then the negative pole, by which a slight shock was occasioned, exciting formication in the hand, and a slight sense of burning in the eyelid and cheek, which appeared somewhat engorged and reddened. After an interval of two days, fourteen pairs of plates were employed during a period of seventeen minutes, — during which time there was manifest elevation of the eyelid, and a diminution of the deformity of the cheek. After another interval of two days, fifteen pairs were employed during a period of twenty minutes, — and with marked advantage. The treatment was continued, the number of plates and the duration of their employment being gradually diminished. The amaurosis and the paralytic affection were entirely cured, and the patient joined his regiment at the end of a year in perfect health. The sight of the left eye had begun to improve from the time of the third sitting.

Case 2. — John Lawrentieff, musician, on the 9th April, 1837, fell into a well, receiving a concussion of the brain and spinal marrow. Appropriate treatment was pursued, but incontinence of urine remained, together with paralysis of the feet, affecting both sensation and motion. Galvanism was then resorted to. A moist cloth was laid upon the sacrum, and another upon the dorsum of each foot. The positive pole was applied over the sacrum, the negative to the feet. Thirty, and afterwards thirty-five pairs of plates were employed for twenty minutes, and only a slight formication in the toes was the result. On the following day, two needles were introduced by the side of the spine, and two others near the toes; the first being made to communicate with the positive pole, and the latter with the negative pole. The effect of thirty pairs of plates was so marked that it was thought best to remove five of them. Wherever the needles were introduced, the patient experienced a sense of burning, more towards the positive than the negative pole. Near the ankles it appeared to him as if the bones were cracked. The battery was employed fifteen minutes. On the third day, the same apparatus was employed with a slight modification. From this time, the patient began to move his limbs, and the incontinence of urine ceased. After eight sittings he regained the entire use of his feet, and at the time of the report had remained well nearly a year.

Case 3. — W. K., of scorbutic disposition, was received in the hospital on the 15th August, 1837, on account of acute arthrodynia of the hands, which assumed the character of erratic rheumatism, the result of which were dull pains, immobility and considerable enlargement of the joints, especially of the left hand and foot. After the ineffectual use of other remedies, galvanism was resorted to on the 2d November. The cuticle was removed by means of blisters from the left wrist and the left instep, a plate of zinc laid upon the former, and one of copper upon the latter, and the two brought into communication by means of a copper chain. The patient soon felt a sensation of burning under the zinc and soon afterwards under the copper, accompanied by an abundant flow of lymph in both situations; but both the burning and the secretion were more marked under the zinc. After an hour and a quarter, the plates were removed, and the blistered surfaces dressed with cerate. The swelling and stiffness of the left wrist had greatly diminished. On the 3d of November, (the following day,) a similar application was made to the corresponding parts on the right side. The next day, on both sides. On the 5th, the application was made to both wrists an hour and a half. On the 7th, alternately to both knees; and on the 8th, alternately to both ankles. After seven applications, the pain and stiffness of all the affected joints had disappeared. On the 13th November, he left the hospital perfectly cured.

Case 4 John Zavarin, of feeble constitution, lost entirely the sensibility and the use of the left leg, in consequence of a scorbutic swelling of the knee and foot. The foot was constantly extended, and returned with a jerking motion to the same position, when it had been flexed. Galvanism without puncture, was first tried, but without any sensible effect; a needle was then introduced under the left knee, and two others into the dorsum of the foot; the first was brought into communication with the zinc pole, and the two last, with the copper pole. The battery consisted of twelve pairs of plates, three inches in diameter, moistened with a solution of muriate of ammonia. The application was continued twenty minutes. The next time, eighteen pairs of plates were used, the poles reversed, and the application continued twenty-five minutes. After an interval of one day, twenty-five pairs of plates were employed, moistened with a solution of muriate of soda. The positive pole was applied to the leg, the negative was held in the hand of the patient, who applied it to the positive pole. Afterwards the column was diminished, and after several sittings, the patient was able to walk alone, but he continued to drag the foot somewhat after him, so that in this case, the cure was not perfect.

Case 5. Demitrii Aphonasieff, an inferior officer, in consequence of an attack of nervous fever, was affected with such a degree of coldness and insensibility of both lower extremities from the knees downward, that he could not distinguish a warm cataplasm from a cold one; and a plaster of cantharides was applied for five days without any effect; he could neither stand nor walk, and at night, he had dull pains in the tops of the feet Mr. P., at last succeeded in removing the cuticle by blisters applied to the dorsum of the feet, and applied a plate of copper upon one, and one of zinc upon the other, and connected them by means of a chain. Under the zinc plate was the most decided flow of fibrin, and a sense of burning, with an improvement of the symptoms. The plates were then reversed, and the application continued an hour and a half. After four sittings, the natural warmth and mobility were restored to the left limb, but not to the right. Acupuncture with galvanism were then applied to this limb three times within four days, the needle being at one time connected with the positive, and at another, with the negative pole, while the other pole was held in the moistened hand of the patient. The result was favourable, warmth and motion being restored to the right limb. (The report of this case is incomplete, sufficient time not having elapsed to make known the result.) —*Russian Jour.*

Oil of Ergot. — Mr. Wright, of Edinburgh, recommends this preparation of ergot as possessing all the virtues of the article, and adduces the concurrent testimony of other distinguished practitioners to its value as a therapeutic agent.

The readiest and best, but most expensive way of preparing it, is by percolating ergot in a state of fine powder, with sulphuric ether. By allowing the ether to evaporate spontaneously, the oil of ergot is left in its purest form. * If kept in a stopped bottle, and in a cool, dark place, it will retain its activity for years. The dose is from twenty to fifty drops, in any convenient fluid vehicle, as warm tea or weak spirits and water. It is more easily given than the infusion; it has a much less disagreeable taste, and operates with more rapidity; it rarely produces sickness. — *Edin. Med. and Surg. Jour.*

* Another process is to digest the ergot in liq. potassæ, at a temperature of 120° – 150°, until a perfect saponaceous solution is formed. The liquid is then to be diluted with half its weight of water, exactly neutralised with sulphuric acid, and submitted to distillation from a saline or an oil bath. The product is white, adhesive, fatty-looking, almost free from empyreuma, and nearly tasteless.

Oil of Cod in Scrofulous Affections. Mode of preparing it. By M. Dunovan, Esq.

The following is a summary of the effects observed: When properly administered, cod-oil cures scrofula of the bones, marasmus, and chronic arthritis of a scrofulous or rheumatic form. Caries, accompanied by a sore and swelling of the soft parts, requires the treatment with oil to be seconded by local applications, such as compression, and ioduretted alcoholic fomentations. Cod-oil is of no avail against gouty arthritis or swelling of any lymphatic glands but those of the abdominal cavity; its action seems doubtful or null in scrofulous phthisis, when at all advanced. To produce advantageous results in any disease, the use of cod-oil must be persevered in for several months. The proportion of the dose is not given, but one patient of twenty years took four tablespoonfuls a day, and a little girl of ten years took three spoonfuls.

Mr. Dunovan thinks that great care should be used in preparing the oil, particularly by guarding against putrefaction and a charring heat. This is the method he recommends. Take any quantity of fresh and healthy livers of cod, throw them into a very clean iron pot and place it on a slow fire, stir them continually until they break down into a kind of pulp: water and oil will have separated. When a thermometer plunged in the pulp will have risen to 192°, the pot should be taken from the fire, its contents transferred to a canvas bag, and a vessel placed underneath. Oil and some water will run through. After twenty-four hours, separate the former by decantation and filter it through paper.

The oil thus prepared is of a pale yellow colour; its smell is weak, its taste bland and totally free from rancidity, and its specific gravity is 0.934. In cold weather it deposits much stearine, and this ought not to be separated.* — *Dublin Jour.*

Lupus treated by leeches. Dr. Hannay, surgeon to the Lock Hospital, has treated six cases of this obstinate disease by the *daily* application of from two to four leeches to the gum of the upper jaw. The worst case was cured in 48 days, 140 leeches having been applied. The author insists upon the daily use of these means, as well as of such remedies as are calculated to improve the general health, and such local applications as may do good. — *Med. Gazette.*

Acetate of lead in Bronchitis. Dr. Henderson in a well written article, recommends in the most decided terms, and after an ample experience of several years, this remedy in bronchitis attended with *profuse secretion.* He uses it in the acute form of the disease, in any stage, especially in that form where it exists as a complication of measles, or whooping-cough. In this form of the disease, he commonly combines it with ipecac, antimony, or calomel, omitting it if the secretion is checked without an improvement in the other symptoms. He gives it in doses of two to three grs. every four to six hours in adults, and one fourth to one gr. every two and three hours to children. But it is in chronic bronchitis, with abundant secretion, that he has found it most beneficial. He combines it in doses of one or two grs. with extr. hyoscyam. and one gr. of squills, to be taken three or four times a day. — *Med. Gazette.*

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* Gmelin, (Jour. de Pharmacie, Ap., 1840,) has detected iodine in the oil of cod. It is possible then that it may owe its efficacy in scrofulous affections in part at least to this.

Poisoning by the preparations of Copper. At the meeting of the Royal Academy of Medicine, June 16th, M. Orfila read a memoir on this subject. The following are his conclusions :

1st. The acetate and sulphate of copper, introduced into the stomach, or applied to the sub-cutaneous cellular tissue of living dogs, are absorbed, and carried into all the organs of the body.

2nd. The same is probably true in relation to the human species.

3d. It is possible by chemical means to remove the metallic copper, from that portion of the salts of copper which has been absorbed.

4th. It becomes absolutely necssary to effect this in cases where the poison is not found in the alimentary canal, or in other parts to which it is directly applied, or in the matter vomited. For in limiting ourselves, as we have been accustomed to do, to search for the salts of copper in what is evacuated from the stomach and bowels, we incur the risk of not finding them, either because they are no longer in the alimentary canal, or if they have been vomited, they have been thrown away; while on the other hand, we can always obtain the metallic portion of that which has been absorbed.

5th. A medico-legal report *in any case* must be regarded as incomplete and unsatisfactory, if we have neglected to search for the salts of copper in those parts where they exist after being absorbed.

6th. Besides that portion of the salts of copper which has been absorbed during life, and which is unequally disseminated through all the tissues of the body, many organs, particularly the viscera of the abdomen, if the salts have been taken by the stomach, and especially those portions of their surface which lie in direct contact with the alimentary canal, contain a still larger proportion ; for a certain quantity of those salts has has been absorbed by *imbibition after death*, which will vary according to the period when the body is examined. Thus the copper obtained from these organs is derived both from the salts which had been absorbed before and after death.

7th. This imbibition above referred to, and which is proved to a certainty by the experiments of Foderâ, Collard de Martigny, Magendie, Müller, and myself, is not peculiar to the case of poisoning by copper, but occurs equally in every case of poisoning, in which the substance employed, imperfectly absorbed during life, remains in our tissues after death; provided it be in a state of solution, or capable of being dissolved by the liquid in contact with it. Thus what has been advanced in relation to copper, both as to its absorption and imbibition, is equally true of of all other poisons that have been absorbed.

8th. It is impossible, in a majority of cases, to determine whether the salts of copper and other poisons obtained from the viscera in medico-legal examinations, have been introduced into the system *before or after death*, either by studying the symptoms, or the anatomical changes of organs, or by chemical experiments made upon organs at a distance from the alimentary canal, or upon one portion of an organ, in preference to another portion. In fact, in certain very rare cases, as after the body has been long buried, and scarcely any remains of the viscera is discoverable, the question becomes still more difficult to solve; unless the facts of the case obtained by the magistrates who examined it prove positively, that the poison was not introduced into the alimentary canal after death. Judicial reports, however, do not afford us a single case of a charge of poisoning, in which the malignity of a party was carried so far as to inject poison into the alimentary canal after death.

9th. We can discover the salts of copper which have been absorbed and produced poisoning, by boiling the flesh and the viscera in distilled water for an hour, filtering and drying the product, (decoctum) carbonizing it by azotic acid, or decomposing it by the azotate of potass.

10th. After boiling for ten hours, the whole of the salt of copper which has been absorbed, is not dissolved, sufficient will have been obtained to settle the fact of its existence.

11th. Distilled water after an hour's boiling does not hold in solution any appreciable quantity of the copper naturally contained in our tissues. This may be separated, partially, by the concentrated acids, and entirely by incineration. So that the experimentor should conclude that a preparation of copper has been actually taken during life either as a poison or a remedial agent, if he discovers after an hour's boiling of the viscera or flesh of a person suspected of having been poisoned, that the watery decoction contains copper — unless it be *proved* that this poison has entered organs by imbibition after death.

12th. The best method is to boil first the viscera which lie remote from the alimentary canal, then those portions of the abdominal viscera which do not lie in contact with the canal, and finally, those portions which have been in contact with the stomach and intestines. By proceeding in this manner, we shall always be sure of obtaining the greatest quantity of the poison from the portions last examined, and gain possession of facts which may assist us in settling questions which may arise in relation to imbibition.

13th. If our medico-legal examinations, instead of being confined to the organs themselves, were directed to the alimentary and excrementitious substances contained in the digestive canal, or to the liquids vomited, it would be necessary to boil these substances for an hour in distilled water, to filter the liquid, evaporate it, and decompose the residuum with pure azotic acid, or with the azotate of potass free from copper; — the presence of this metal in the product of decomposition would allow us to *affirm* that some preparation of copper had been taken either as a poison or a remedial agent, unless the poison had been injected into the alimentary canal after death. Although the salts of copper in intimate combination with organic substances are dissolved in but small quantity by boiling water; yet, as I have already remarked, a sufficient quantity would exist to be evident on a thin plate of iron.

14th. If after having thus treated the alimentary and excrementitious substances by boiling them in water, we discover no traces of copper, we should err in subjecting them to the action of concentrated acids, or to incineration, with the hope of obtaining copper which might have been given as a poison. For supposing that we should thus obtain it, we could not say that it was derived from this metal given either as a poison or as a remedial agent, from the fact, that many alimentary substances naturally contain a sufficient quantity of this agent to be made evident by incineration. The much better course would be this — to leave alone the alimentary matters, and subject to the process of boiling the digestive canal itself, the liver, the spleen, and the veins, as I have already remarked.

15th. Admitting fully with M. Devergie, that the natural quantity of copper contained in the intestines of an adult does not exceed forty milligrammes, I am still unwilling to agree with him in the opinion that this small proportion is of some importance in a medico-legal point of view; by enabling us to determine by incineration whether the copper thus obtained is that which exists in the tissues naturally or not; because as he himself remarks, the amount of copper found in the few experiments he has made is so variable in quantity that the above estimate cannot be regarded as exact; and moreover, because it may frequently happen as a consequence of poisoning by a salt of copper, that so small a quantity may remain in the intestines, that even after uniting with that naturally found there, we may have only forty or fifty milligrammes. At the utmost, we could only take account of the proportion yielded by incineration, when this proportion shall far exceed that which future and repeated experiments shall prove to be the real maximum of copper found in the healthy tissues. But even in this case, the mode which I propose is by far the best; because it gives us clear and precise results. I will repeat it here. *Copper introduced into the system as a poison, can be extracted from the organs by boiling them in water for an hour; while we cannot extract a single atom of the copper which naturally exists in an organ by this process.—Arch. Gén. de Méd.*

New-York, 22d September, 1840.

To the Editors of the New-York Journal of Medicine.

Gentlemen,

As I have recently operated twice for squint-eye, and as to my knowledge, this new and interesting operation has not yet been recorded in the medical periodicals of this country, I take the liberty of briefly stating the facts to you.

On the 14th instant, I operated in presence of Drs. Swett and Henschel, on the right eye of Miss D. of Brooklyn, about 19 years old, who from her infancy had squinted very badly with her right eye, inwards. I took the conjunctiva up with hooks, and used a narrow probe-pointed knife curved so as nearly to form a half circle, cutting on the concave side. With this I went round the eye and hooked the m. rectus internus upon it, but the edge not being sufficiently sharp and the resistance of the muscle not strong enough, I was not able to divide the muscle by the action of the knife alone; I therefore pressed the muscle with the ivory handle of another knife against the cutting edge, and thus divided it. The effect was instantaneous; the eye yielded to the now unchecked contraction of the rectus externus, was forcibly drawn outwards, where it remained quivering for an instant, and then gradually took the right position in its socket. The conjunctiva remained a few days suffused with blood, but no inflammation ensued. For the first two days the eye-sight was disturbed by the circumstance that all objects were seen double, but this soon ceased, and the eye is perfectly straight. The young lady has a full control over all the motions of the eye, except that she cannot move the right eye inwards independent of the left; that is, she cannot squint now with that eye, even if she tries.

The second case was that of Mr. M. from Philadelphia, who likewise squinted with his right eye, inwards. Instead of taking up the conjunctiva with hooks, as I did in the first case, I used in this a pair of common pincers, with which I took up a fold of the conjunctiva, and divided it with a pair of scissors. The remainder of the operation I performed as in the first case. I did in this instance not so distinctly observe the sudden action of the external rectus, the eye being covered with blood from the division of a small blood-vessel in the conjunctiva. The operation was performed on the 19th instant, and on the 23d, four days after, the gentleman returned with a straight eye to Philadelphia.

Allow me to conclude this brief statement with the remark, that in my opinion the operation must be attended with immediate success, and that if the eye does not take its right position at once, I should not expect much improvement from time. The want of immediate success I am inclined to ascribe to the circumstance of the muscle not being completely divided, some of the fibres remaining entire, and keeping up the contraction, and consequently the wrong position of the eye.

I am, gentlemen, very respectfully,
Your obedient servant,
Detmold, M.D.

To the Editors of the New-York Medical and Surgical Journal.

Gentlemen:—In your last number, (July,) you did me the favour to publish some remarks of mine on Renal Disease, occurring in young children, in which I suggested that some of their cerebral affections might depend on this cause, and recommended a careful examination into the condition of the urine, in the more intractable of those cases. I am gratified to find myself anticipated by an eminent physician, Dr. Golding Bird.* As I had, of course, not seen his paper when mine was written, the coincidence between our views is remarkable; and backed by Dr. Bird's superior authority, I venture to bespeak for the subject more attention than it could have deserved from any remarks of my own. The article is entitled "Observations on the occurrence of Cerebral Disorders, in connection with diseased kidneys in children." Some brief extracts from it, I beg leave, with a view of further exciting professional attention towards the subject, to make. "There is considerable reason to believe that the functional, or structural lesion of the kidney is a much more frequent exciting cause of many of the head affections of children, than has hitherto been suspected." "It is more than probable that many of the obscure *heart* affections (head ?) of children, characterized by coma, or convulsions, and coming on without any obvious cause, may in many instances be traced to lesion of the kidney. Hence such cases may be referred to the class pointed out by Dr. Addison, in the memoir before alluded to, and thus suspicion will be awakened to the real nature of the ailment, by the peculiar character of the cerebral symptoms manifested." 'I am convinced that cases do occur, and by no means unfrequently, in which the peculiar character of the cerebral symptoms, *even in very young children*, would direct attention to the kidneys as the exciting cause of the more prominent affection, *even where œdema, and even albuminous urine did not exist.*"

*London Med. Gaz. June, 1840.

"It is by no means necessary that any exanthem should have previously existed."

The first of two cases detailed by Dr. B. is that of a boy aged 3 years, who had had scarlatina some months previously. On the fifth day of his illness, which consisted in vomiting, quick and feeble pulse, brown tongue, and scanty urine, &c., he became *nearly* comatose. He so lay, just capable of being roused and that was all, for eleven days, no paralysis and no convulsions occurring, when he died. His urine was slightly coagulable. The brain was snowy white and a very little serum in the ventricles. Both kidneys were tinged with blood, and of a deep chocolate colour. The right slightly but distinctly mottled. No other diseased appearances. The second case is one of retention and partial suppression of urine from imperforation of the penis in a child eight days old. It lay in equal stupor, with a pale face, like a child deeply narcotized, which is according to Dr. B., in the absence of screaming, the characteristic of the cerebral disease. The kidneys were chocolate coloured and turgid with blood; on squeezing the tubuli an opaque, milk-like fluid exuded. No other disease could be detected. The bladder contained half a pint of fetid, turbid urine.

If the reader will turn to the case of S. E. K., reported in the paper alluded to, he will find that the condition in which she lay, and her appearance, closely corresponded with that which Dr. B. considers as characteristic. I look upon the disease in her case to be very much more advanced than in either of those which he has reported, and as such, more valuable as an evidence of its existence. Dr. B. considers his cases interesting inasmuch as *the peculiar coma* is characteristic of the renal affection. But I have gone further in suggesting the dependence upon the latter, of some obscure forms of cerebral disease. The coincidence of our views will, I hope, be considered as a further justification of the remark made by me, that the "condition of the kidneys and urine in young children, labouring under head affections, not less than of the brain, heart, lungs, and cervical glands, ought to receive more attentive examination hereafter," and I trust that the foundation has thus been laid for a not insignificant extension of the pathology of the kidneys, and addition to our knowledge of cerebral disease.

I am, gentlemen,
Your obedient servant,
W. C. Roberts.

September 8, 1840.

College of Physicians and Surgeons of New-York. — The course of lectures for the ensuing season, will commence on the first Monday, in November, and continue four months. Clinical Instruction at the New-York Hospital, at the Eye Infirmary, and Demonstrations in Anatomy will be continued as usual.

The course of lectures in the Albany School will commence on the first Tuesday in November, and those in the Geneva College, on the first Tuesday in October. The lectures at Fairfield are suspended.

Medical Society of the City and County of New-York. — At the Anniversary Meeting in July, the following gentlemen were elected officers for the ensuing

year; W. W. Miner, *President;* N. H. Dering, *Vice President;* Benj. R. Robson, *Treasurer;* Benj. B. Coit, *Corresponding Secretary;* Henry D. Bulkley, *Recording Secretary. Censors,* James O. Pond, James Macdonald, Thomas C. Chalmers, Moore Hoit, and Edward L. Beadle.

At an adjonrned Anniversary Meeting it was resolved:

That there shall be a meeting of the Society every alternate month, between the stated meetings of the Society, exclusively for literary and scientific purposes, and that, for such meetings, no particular number shall be necessary to constitute a quorum.

The stated meetings of the Society, are held on the second Monday in every second month.

At a subsequent adjourned Anniversary Meeting, a committee was appointed to revise the code of Medical Ethics.

A standing committee of Pharmacy was also appointed to confer with the College of Pharmacy respecting the pharmaceutical preparations now in use among us.

A committee was also appointed to reprint the by-laws as revised, together with all the laws of the State relating to medical matters, with the dates annexed.

We are requested to state that Dr. Paine will soon reply to the several strictures by "H. I. B.," recently published in the Boston Medical and Surgical Journal, in relation to the Essay on the "Principal Writings of M. Louis, contained in his 'Medical and Physiological Commentaries.'" The reply will appear in the foregoing journal and in pamphlet form.

We are informed that a new edition of Dr. Stewart's translation of Billard is about appearing from the press of Langley & Co.

We are requested by Messrs. Souillard, Delluc & Co., No. 2 Park Row, to notice a new and elegant preparation of Sarsaparilla, which has the advantage of being prepared in a very portable form. It is called the Hydro-alcoholic Extract. The dose is a teaspoonful diluted in half a tumbler of water three times a day.

Graefe, the celebrated Berlin surgeon, died at Hanover, July 4th, where he had gone to operate for cataract on Prince George of Cumberland.

Charles Locock, Esq., M. D., has been appointed first physician accoucheur, Robert Ferguson, Esq., M. D., 2d do. and Richard Blagden, surgeon do. to the Queen of England.

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